XL8 Control Centre
Quick Reference Guide

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XL8 Control Centre — Quick Reference Guide
DOC04-XL8 Issue F — April 2010
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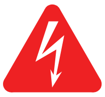
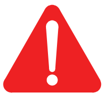
IMPORTANT SAFETY INSTRUCTIONS



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

1 Read these instructions.

2 Keep these instructions.

3 Heed all warnings.

4 Follow all instructions.

5 Do not use this apparatus near water.

6 Clean only with a dry cloth.

7 Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.

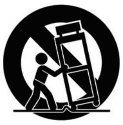
8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.

11 Only use attachments/accessories specified by the manufacturer.

12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



13 Unplug this apparatus during lightning storms or when unused for long periods of time.

14 Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15 Use the mains plug to disconnect the apparatus from the mains.

16 **Warning: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.**

17 **Warning: Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.**

18 **Warning: The mains plug of the power supply cord shall remain readily operable.**

Midas

EC-Declaration of Conformity

The undersigned, representing the following manufacturer

Manufacturer:	**Address:**
Midas Klark Teknik Ltd.	Klark Industrial Park, Walter Nash Road, Kidderminster. Worcestershire. DY11 7HJ.

hereby declares that the following product

Product Type Number	Product Description	Nominal Voltage(s)	Current	Freq.
XL8	Control Centre	115V AC 230V AC	12A 6A	50/60Hz

is in conformity with the regulations of the following marked EC-directives and bears the CE-mark accordingly

reference number	title
2004/108/EC	EMC Directive (EMC)
2006/95/EC	Low-Voltage Directive (LVD)

The conformity of the product with EC Directives for use in environment E4 is provided by compliance with the following standards:

Standards/date:

Applied Electrical Safety test standards:

reference number	title
EN 60065:2002	Audio, video and similar electronic apparatus. Safety requirements

*Applied EMC **emission** test standards:*

ref. no.	title
EN 55103-1:1996 Class A	EN 55103-1 Annex A: Radiated magnetic disturbance, 50Hz-50kHz CISPR 22: Radiated disturbance, 30-1000MHz CISPR 22: Conducted disturbance, ac & signal ports CISPR 16: Discontinuous disturbance EN 61000-3-2:2000 Mains harmonics EN 61000-3-3:1995 Mains voltage flicker

*Applied EMC **immunity** test standards:*

ref. no.	title
EN 55103-2:1996 Class A	EN 61000-4-2:1995 Electrostatic discharge EN 61000-4-3:1996: Radiated RF disturbance, 80-1000MHz EN 55103-2 Annex A: Magnetic LF disturbance, 50Hz–10kHz EN 61000-4-4:1995: Fast transient bursts, ac & signal ports EN 61000-4-5:1995: Surge, ac port EN 61000-4-6:1996: Conducted RF field, ac & signal ports EN 61000-4-11:1994: Mains voltage dips and interruptions

Place, date: Kidderminster, UK
15th April 2010

General Manager
Printed name: John Oakley

AVP, Product Development
Printed name: Alex Cooper

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Precautions

Before installing, setting up or operating this equipment, make sure that you have read and fully understand all of this section and the "IMPORTANT SAFETY INSTRUCTIONS" at the front of this guide.

This equipment is supplied by a mains voltage that can cause electric shock injury!

The following must be observed in order to maintain safety and electromagnetic compatibility (EMC) performance.

Safety warnings

This equipment is fitted with two PowerCon® mains power sockets. For safety reasons the earth leads must not be disconnected.

Signal 0V is connected internally to the chassis.

To completely disconnect this equipment from the AC mains, while observing full safety precautions (see "Power" on page xi), switch off the five bay isolator switches (rear of control centre) *one at a time* and then switch off the mains at the two mains outlets that supply the PowerCon® sockets. It is now safe to isolate the control centre by removing the two PowerCon® mains leads from rear of control centre.

To avoid electric shock, do not remove covers.

General precautions

In the event of ground loop problems, disconnect the signal screen at one end of the connecting cables. Note that this can only be done when the equipment is used within a balanced system.

Do not remove, hide or deface any warnings or cautions.

Power

The system power supplies contain LETHAL VOLTAGES greatly in excess of the mains voltage and that its rails can produce extremely large currents that could burn out equipment and wiring if shorted.

The internal power supplies are of the switch mode type that automatically sense the incoming mains voltage and will work where the nominal voltage is in the range 100VAC to 240VAC.

Each mains inlet is to be sourced from its own separate wall-mounted mains outlet socket. Otherwise, their mains sources must be suitably distributed so as to meet local safety regulations.

Two PowerCon® mains inlets are provided on the rear panel. The correct leads for connection in the area to which the unit was shipped are supplied with the unit. The equipment should only be plugged into the mains outlets using the supplied leads.

When removing the equipment's electric plugs from the outlets, always hold the plug itself and not the cable. Pulling out the plug by the cable can damage it.

Never insert or remove an electric plug with wet hands.

Do not insert or remove a PowerCon® connector into/from the rear of control centre with mains power and/or any of the bay isolator switches on. You *must* make sure all bay isolator switches are off and mains is switched off at the power outlet(s) first.

When switching the five bay isolator switches on/off, make sure it is done one at a time. It is important that you don't switch on/off two or more simultaneously.

Before switching the XL8 on/off, please make sure that all monitor loudspeaker power amplifiers are turned off or muted.

Handling the equipment

Completely isolate the equipment electrically and disconnect all cables from the equipment before moving it.

When lifting or moving the equipment, always take its size and weight into consideration. Use suitable lifting equipment or transporting gear, or sufficient additional personnel.

Do not insert your fingers or hand in any gaps or openings on the equipment, for example, vents.

Avoid inserting or dropping foreign objects, such as paper, plastic, metal etc., into any gaps or openings on the equipment, for example, vents. If this happens, immediately disconnect the equipment from the AC mains; see "Safety warnings" on page xi. Then have the equipment inspected by the manufacturer's qualified service personnel.

Do not press or rub on the sensitive surface of the GUI screens.

If the glass of the GUI screen is broken, liquid crystals shouldn't leak through the break due to the surface tension of the thin layer and the type of construction of the LCD panel. However, in the unlikely event that you do make contact with this substance, please wash it out with soap.

Installation

Before installing the equipment:

- Make sure the equipment is correctly connected to the protective earth conductor of the mains voltage supply of the system installation through the mains leads.
- Power to the equipment must be via a fused spur(s).
- Power plugs must be inserted in socket outlets provided with protective earth contacts. The electrical supply at the socket outlets must provide appropriate over-current protection.
- Both the mains supply and the quality of earthing must be adequate for the equipment.
- Before connecting up the equipment, check that the mains power supply voltage rating corresponds with the local mains power supply. The rating of the mains power supply voltage is printed on the equipment.

Location

Ideally a cool area is preferred, away from power distribution equipment or other potential sources of interference.

Do not install the equipment in places of poor ventilation.

Do not install this equipment in a location subjected to excessive heat, dust or mechanical vibration. Allow for adequate ventilation around the equipment, making sure that its fans and vents are not obstructed. Wherever possible, keep the equipment out of direct sunlight.

Do not place the equipment in an unstable condition where it might accidentally fall over.

Make sure that the mains voltage and fuse rating information of the equipment will be visible after installation.

Audio connections

To ensure the correct and reliable operation of your equipment, only high quality balanced, screened, twisted pair audio cable should be used.

XLR connector shells should be of metal construction so that they provide a screen when connected to the console and, where appropriate, they should have Pin 1 connected to the cable screen.

Radio frequency interference — Class A device

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Electric fields

Caution:
In accordance with Part 15 of the FCC Rules & Regulations, "… changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment."

Should this product be used in an electromagnetic field that is amplitude modulated by an audio frequency signal (20Hz to 20kHz), the signal to noise ratio may be degraded. Degradation of up to 60dB at a frequency corresponding to the modulation signal may be experienced under extreme conditions (3V/m, 90% modulation).

Operation

To avoid electrical shock, never operate the equipment with the covers removed.

Safety equipment

Never remove, for example, covers, housings or any other safety guards. Do not operate the equipment or any of its parts if safety guards are ineffective or their effectiveness has been reduced.

Optional equipment

Unless advised otherwise, optional equipment must only be installed by service personnel and in accordance with the appropriate assembly and usage regulations.

Special accessories

To comply with part 15 of the FCC Rules, any special accessories (that is, items that cannot be readily obtained from multiple retail outlets) supplied with this equipment must be used with this equipment; do not use any alternatives as they may not fulfil the RF requirement.

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Overview

Chapter 1: Introduction

Welcome to the XL8 Control Centre. The XL8 Control Centre is a user-friendly, state-of-the-art, high performance digital console specifically designed for live use.

The XL8 Control Centre, which forms an integral part of the XL8 Live Performance System, was conceived by Midas to offer audio professionals high-performance audio equipment, designed to provide no-compromise sonic quality with a feature set that offers all essential facilities and functions. It represents the very best of British design and engineering combined with contemporary, efficient manufacturing methods, and will give you many years of reliable service.

So, to obtain the best results with a minimum of effort, please read this Quick Reference Guide and, finally, enjoy your Midas XL8 Live Performance System!

About this guide

This is the Quick Reference Guide for the XL8 Control Centre. Its purpose is to quickly familiarise the user with the XL8 Control Centre, show how to set up the XL8 Live Performance System and then show how to carry out some basic operations on the XL8 in order to produce some audio. This guide is structured such that it may also provide a useful introductory guide for training purposes.

This document is aimed at professionals, such as front of house (FOH) and monitor (MON) engineers, who will be using this equipment in a live performance environment. It is assumed that the reader has prior experience of using professional audio equipment and has, most likely, undergone training on this system.

This guide has been structured specifically so that mix engineers and system technicians can go straight to the areas applicable to them, that is, "Operation" on page 11 and "Connecting And Setting Up The System" on page 59, respectively. The rest of the guide is intended for general readership.

For full details on the XL8 Live Performance System and the XL8 Control Centre, refer to the XL8 Live Performance System Owner's Manual (part number DOC02-XL8), which can be found on our website at www.midasconsoles.com.

Note: *The content of this Quick Reference Guide does not supersede any information supplied with any other item of the XL8 Live Performance System.*

XL8 host software version

This guide is for an XL8 Control Centre running host software version 1.11 and later.

Optional extras

An easyglide is available for use with the XL8.

Warranty and registration

Midas has total confidence in the quality and reliability of this product. To back this up, this product comes with the standard Midas and Klark Teknik three year warranty.

Please take the time to register your product by completing and returning the registration card or by registering on our website at www.midasconsoles.com.

Service and support

The XL8 is a very hi-tech piece of equipment. We provide superb levels of support and service to give users confidence in Midas digital products.

Chapter 2: Introducing The XL8 Live Performance System

The standard XL8 system offers 96 channel inputs, 51 outputs, 51 buses (32 auxes/groups, 16 matrices and three masters), 16 on-board effects processors, PEQs (four-band on inputs and six-band on outputs), up to 48 assignable GEQs (if all stereo effects units are being used), 16 configurable stereo effects (from eight options), surround panning (5.1, LCRS and quad) and comprehensive, easy-to-use routing. XL8 automation provides up to 1,000 scenes with snapshot save/recall capability and global edit, presets and show file archiving.

The XL8 Control Centre forms the core of the XL8 Live Performance System, which also includes a number of 19” rack modules that are interconnected by a networked data system. The network carries both proprietary control data and open architecture AES50 digital audio, and uses readily available standard cabling and connectors. The XL8 uses the proven stable Linux operating system. Third party hardware and software (and plug-ins) can be easily integrated into the system.

Included with the XL8 Control Centre are four mic splitters, five I/O units, 10 DSP units, two routers and a Klark Teknik DN9331 RAPIDE that, collectively, form the standard XL8 Live Performance System configuration.

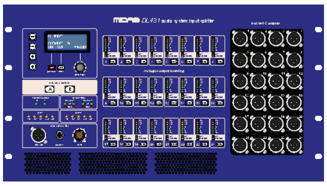
The XL8 Live Performance System is tolerant of any single failure of hardware *or software*. To achieve this the system employs dual redundancy, where a key component has an identical redundant spare that is ready to take over should it fail. Other failure scenarios are managed by the N+1 principle, where redundant components form an acceptable fraction of the system, for example, one of the DSP units in the rack is a redundant spare.

System components (standard supply)

The standard XL8 Live Performance System comprises the following equipment:

- **XL8 Control Centre (1-off):** Comprises five discrete, independent bays, each with its own power supply, surface modules, surface processor, GUI processor and GUI screen. The standard five-bay control centre has three bay types, input (3-off), mix (1-off) and output (1-off).

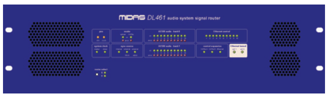
- **DL431 Mic Splitter (4-off):** 6U 19” rack unit that provides 24 mic/line inputs.



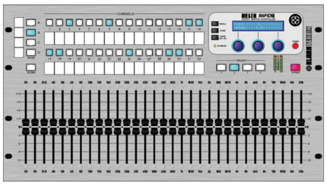
- **DL451 Modular I/O (5-off):** 3U 19” rack unit that provides a maximum of 24 audio inputs and 24 audio outputs.

- **DL471 DSP (10-off):** 1U 19” rack unit that forms part of the modular DSP engine.

- **DL461 Router (2-off):** 3U 19” rack unit that provides the on-stage Cat 5e interconnectivity and the stage-to-FOH link via a single ‘snake’, which can be copper cable or a fibre optic link.



- **Klark Teknik DN9331 RAPIDE (1-off):** 6U 19” rack unit that is a motorised fader remote control for the onboard graphic EQs of the XL8.



- **Snakes and main cables etc.**

To provide a complete audio system, the only other equipment required are mics, amplifiers and loudspeakers.

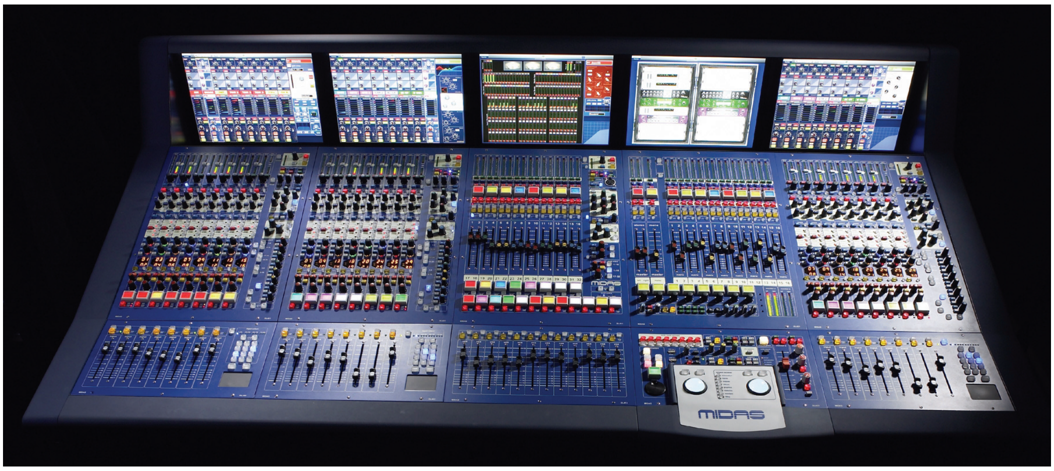
Chapter 3: About The XL8 Control Centre

This chapter introduces you to the XL8 Control Centre and provides a brief hardware description.

Overview of the XL8 Control Centre

The XL8 Control Centre comprises a combined control surface and graphical user interface (GUI) that provide an array of easy-to-use controls for the precise manipulation of audio.

The control surface has been designed to emulate the fast access of an analogue control surface by presenting things in a familiar, consistent and logical way so that experienced analogue engineers can migrate easily to the new digital surface. This is enhanced by visual representations on the GUI at the top of control surface, which also provides extra functionality.



The XL8 Control Centre is built on a robust Midas steel frame chassis similar to those used for established Midas analogue products. The frame houses five bays, each of which is a discrete hardware module that can operate independently of its neighbour. Collectively, the bays provide the primary mixing needs of the engineer.

Each bay has its own power supply, control surface modules, control surface processors, GUI processor and GUI screen. The control surface and GUI processors for each bay are separately connected to the network on duplicated Ethernet links. Also housed within each bay are dual redundant master controller processors and dual redundant high-speed network routers (eight AES50 connections each).

Multiple hardware faults are tolerated by the XL8 Control Centre without loss of audio control due to the dual redundancy and N+1 methods incorporated in the system. This is further helped by the modular nature of the bays and GUI independence. So, if a whole bay fails others can take over or be used instead, and any of the GUI screens can be used to operate the whole XL8 Control Centre, even if *none* of the control surface hardware is working.

Bay and GUI layout

The XL8 control centre has five bays, of which there are three types:

- **Input bays** — three input bays provide fast access to large numbers of faders and important input signal processing controls. The bays are numbered 1, 2 and 3, in order from left to right.
- **Mix bay** — provides fast access to large numbers of *creative* mix faders.
- **Output Bay** — provides access to the matrix/master output mixes and monitor faders, the automation central control and large quantities of complex signal processing systems.

Each bay has a GUI screen at the top and a control surface below, which is subdivided into a control area (shallow rake) and a flat (horizontal) area at the bottom that contains faders, navigational zones, automation etc.

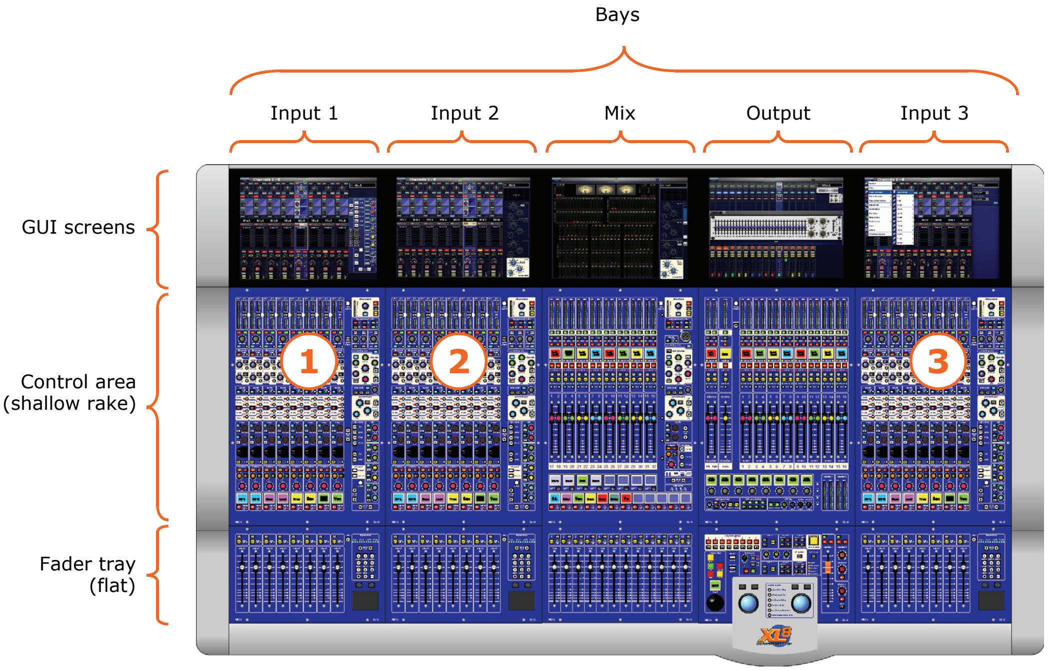
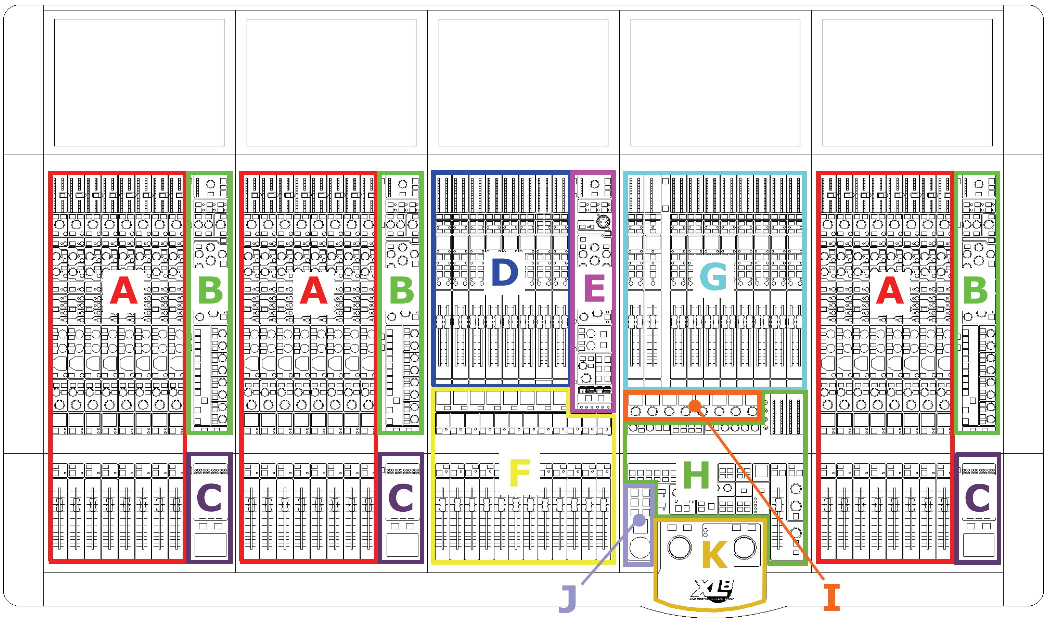

Bays
Input 1
Input 2
Mix
Output
Input 3
GUI screens
Control area (shallow rake)
Fader tray (flat)
1
2
3

Figure 1: Bays

XL8 control surface

During show time the screen functions that require fast access are controlled by control knobs (rotary encoders), pushbutton switches, faders etc. More complex functions that do not require this fast access are controlled by glide pad/trackball and navigational keys. An integral keyboard pulls out from underneath the output bay for text entry to enable setting up and configuration on the output bay GUI screen. An external keyboard can be used on any of the other bays, as each bay has a dedicated keyboard socket on the front of the control centre.



A — **input fast zone**: contains the operator's 'must have now' controls in eight input fast strips.

B — **input channel strip**: contains detail areas, such as the D-zone (dynamic) and E-zone (EQ), that provide a more comprehensive control of an input channel and its mix buses by allowing detailed audio parameter adjustment. Also includes mix preset controls.

C — **input navigation zone**: for input GUI navigation via glide pad, and input channel selection using an array of keys.

D — **mix fast zone**: auxiliary (aux) mix masters in eight dual-channel mix fast strips.

E — **output channel strip**: has similar functionality to the input channel strip (**B**), but is used for the output channels.

F — **VCA and POP groups**: VCA/POP group select buttons and controls, including VCA faders.

G — **output fast zone**: output (matrix) mix masters in eight dual-channel output fast strips, and also master channel strips (mono and stereo left and right).

H — **monitors**: A and B signal path monitoring, communications and mute groups.

I — **I zone**: operator-assignable device controls.

J — **automation**: scene store/recall and system edit.

K — **primary navigation zone**: for mix and output bay GUI screen navigation via trackballs. Includes a **screen access** panel for direct GUI screen access.

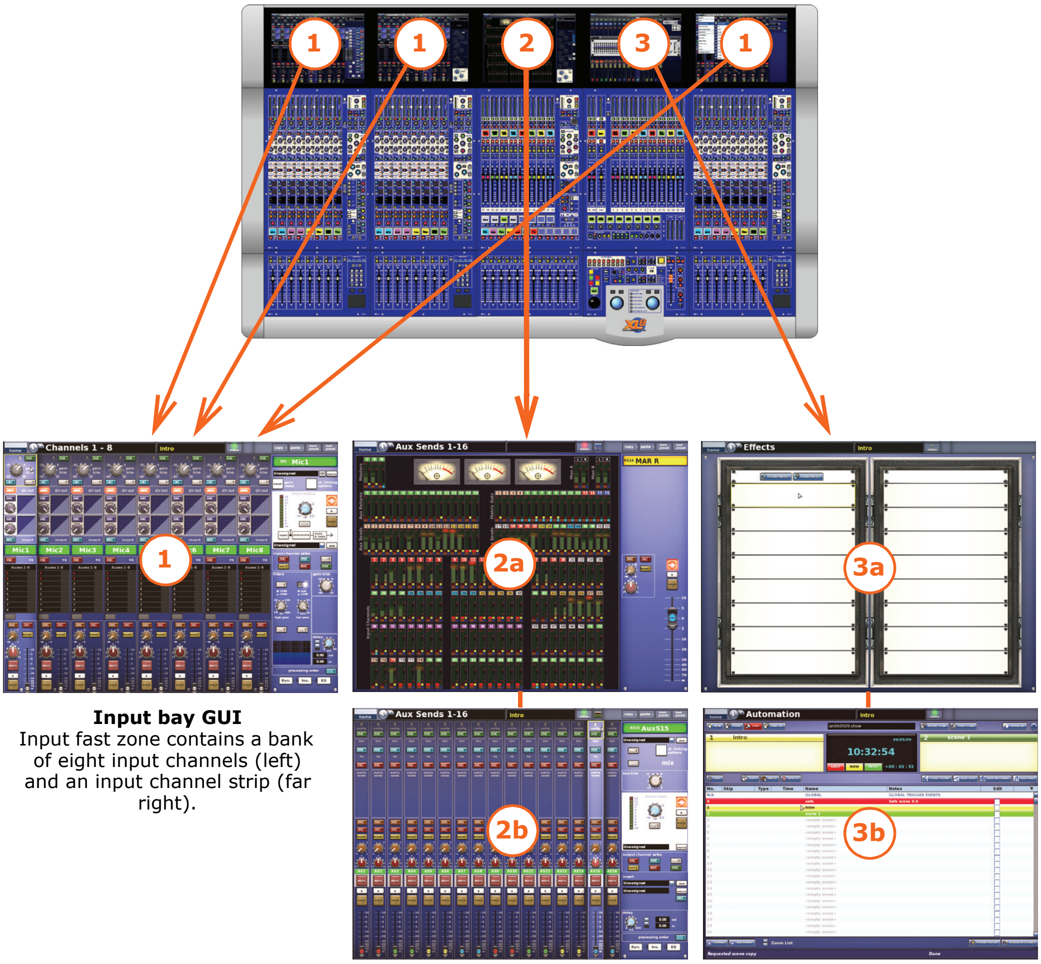
Figure 2: Main areas of control surface

The choice of controls provided by each bay type are prioritised by access time importance. A fast zone area gives instant access to specific functions across the bay. A channel strip (to the right of the input and mix bays) gives greater control of the selected fast strip.

Typically, the XL8 fast zone areas contain signal processing *and* routing levels for input bays, but *only* routing level control on the mix and output bay channel panels. GUI screen navigation tools (keys, glide pad, trackball etc.) are used to manipulate the signal processing required for these paths. This distances these functions from the mixing surface, thus allowing the operator to concentrate more on creative mixing. On analogue systems this is the equivalent of the external processing racks. The exception to this on the XL8 being the graphic EQ for monitor mixing, where fast access is once again required; this is provided by the Klark Teknik HELIX RAPIDE DN9331 Graphic Controller.

GUI

Five screens comprise the graphical user interface (GUI) of the XL8 Control Centre.



Input bay GUI
Input fast zone contains a bank of eight input channels (left) and an input channel strip (far right).

Mix bay GUIs
Option of two displays: **(2a)** dashboard screen showing all meters; **(2b)** output channel screen with, in most cases, 16 mix fast strips. Both displays have an output channel strip on the far right.

Output bay GUIs
Default display is the effects screen **(3a)**, but this can be changed to any of the GUI menu screens, such as input channels, groups, automation **(3b)**, monitors etc.

Figure 3: GUI screens

The GUI, which forms a backdrop to the control surface, represents pictorially the layout of the control surface so that its displays are easy to follow at a glance. Not only does it reflect what is happening on the control surface, but it also provides extra functionality via a GUI menu. This menu lets you access all the screens that you will require to set up, configure, manage and operate the entire XL8 Control Centre — all from a single drop-down list of easy to follow options.

Generally, the GUIs on the input and mix bays have a channel strip on the right. This is the equivalent of the channel strip on the control surface of each of those bays. It displays the selected detail area of the currently selected channel.

Front and rear connections

The XL8 has connector panels on the front and rear that house numerous types of connector, which cater for the connection of mains power leads, 19” rack units, USB memory keys, keyboards, headphones, talk mics, communications, external monitors (input and output), KVM (keyboard, video and mouse) switches, intercoms, AES3 synchronisation, word clocks (75R) and monitors.

The rear panel also houses the mains power inlet and five mains on/off switches, one for each bay. Mains power is supplied to the XL8 Control Centre via two PowerCon® sockets.

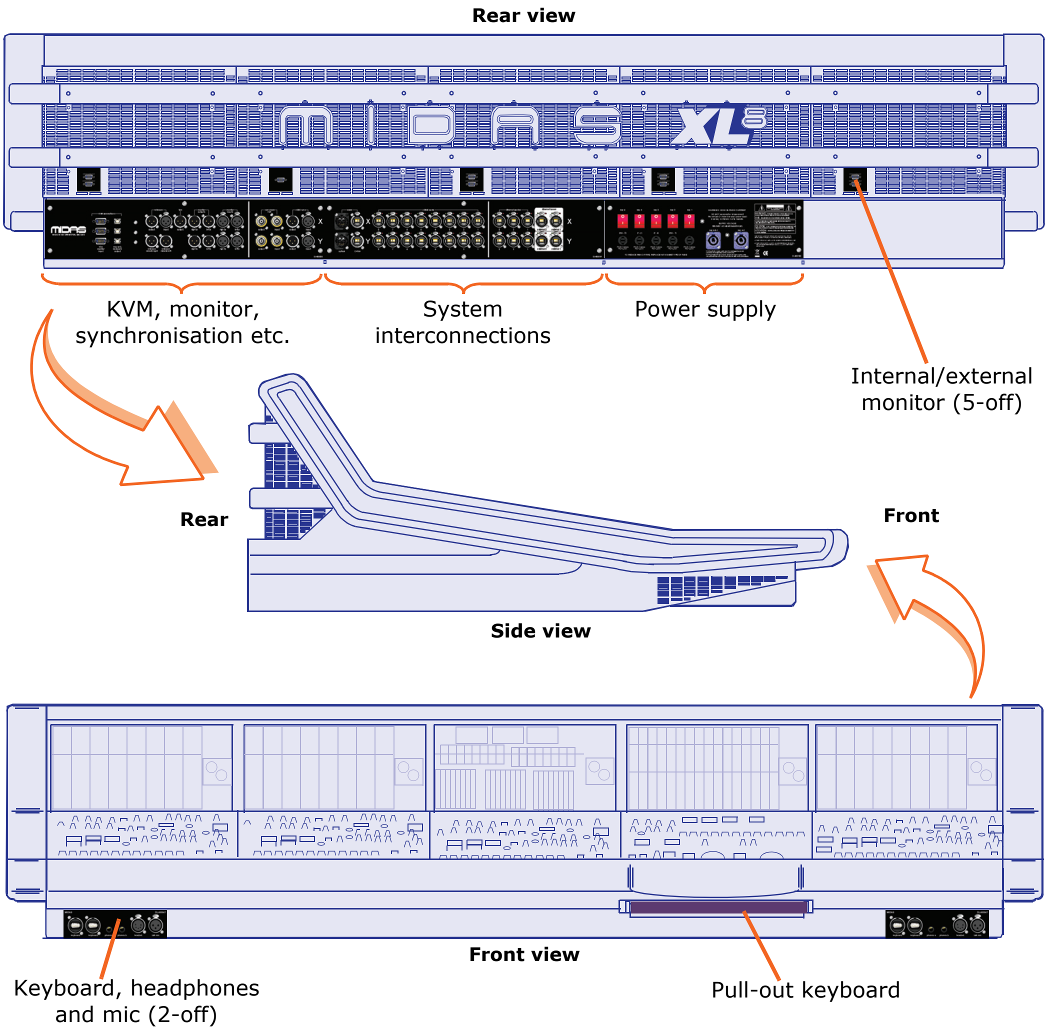

Rear view
KVM, monitor, synchronisation etc.
System interconnections
Power supply
Internal/external monitor (5-off)
Rear
Front
Side view
Front view
Keyboard, headphones and mic (2-off)
Pull-out keyboard

Figure 4: Front and rear connectors on XL8 Control Centre

Pull-out keyboard

The XL8 has a QWERTY keyboard that is used mainly for inputting text, such as when configuring a channel or using automation. It is fitted on a sliding tray underneath the output bay (see Figure 4 “Front and rear connectors on XL8 Control Centre” on page 9) and only operates the output bay GUI screen.

Operation

Chapter 4: Before You Start

This chapter provides useful background information on XL8 operation.

While this system is a complex, high-tech piece of equipment, we have made it as easy to use and as user-friendly as possible.

Principles of operation

XL8 Control Centre operation is based on the concept of colours and groups rather than 'layering' or 'paging', which is the case with most digital consoles on the market today. With so many channels available it is far easier to remember them by their user-configured individual/group colour and name rather than their channel number.

The control surface is populated with instantly recognisable controls that are logically distributed in major sections, so that all the controls you need to access most of the time are always on the control surface, while the remainder are only one action away.

Hints and tips

During operation, we recommend that you carry out the following:

- **Check what is hidden** On the XL8, unlike on an analogue control surface, some of the settings and parameters will be hidden from view (stored in the computer memory of the XL8). To make sure there are no hidden surprises, such as a reverb send left from a previous mix, view unused parameters at various times during a mix.
- **Check the Dashboard screen** It is a good idea to frequently monitor the **Dashboard** screen (default display of the master bay GUI), which provides at a glance an overview of the control centre's status and operation. It shows all the meters and the status condition of faders and some switches, such as solos and mutes. However, some things will still remain hidden.

Saving your work

We recommend that you save your work regularly while carrying out the procedures included in this chapter. Not only is this good practice during normal XL8 operation, but in this instance it may save you from losing some set-ups that could prove useful later on. To do this, create a new show (see "To create a new show" on page 48), and then continue reading through the remainder of this section, following the instructions carefully. Save your work at convenient points (see "To create a new scene using the current settings" on page 49 and "To save a show or create a new one from the current settings" on page 48).

Saving a show versus storing a scene

It is important to understand the differences between saving a show and storing a scene.

- **Storing a scene** saves the current settings of the system to the show file. Scene data is *never* updated to the show file unless you manually store a scene. The show file remains unsaved in RAM after storing a scene.

Although the state of the control centre is copied every five seconds, it is not stored in a scene. Instead, it is placed in the NVRAM (non-volatile random access memory) of the control centre's memory, which is a type of RAM that doesn't lose its data when the power goes off. If the control centre loses power accidentally, these settings are loaded so that audio parameters are identical, thus avoiding audio level jumps. **When power is lost, the showfile loaded (if any) will not subsequently be restored, and any unsaved changes to it will be lost.**

- **Saving a show** copies the show file onto the internal solid-state disk of the XL8. This provides you with a 'permanent' copy, provided you shut down the system properly as detailed in the following section.

Shutting down the XL8 Control Centre properly

When switching off the XL8 Control Centre, we recommend that you use the shutdown option of the GUI menu (see "To switch off the XL8 Control Centre" on page 68).

By using shutdown, the cached copy of the show data, which is maintained by the system, is automatically stored. Shutdown then uses the current showfile, NVRAM data and cache files to restore the XL8 Control Centre to *exactly* the same state as at power down; even to the point of loading the unsaved show and placing you at the correct scene, with non-stored scene data at the control surface.

If you don't use the **Shutdown** option the audio parameters are still restored, but the show and show status (saved/unsaved) cannot be restored automatically. You must manually reload the show and any unsaved changes will be lost.

Chapter 5: Working With The XL8 Control Centre

Although many controls on the XL8 Control Centre are similar to their equivalent analogue-type counterparts, some have been specifically designed for the XL8, particularly those for navigation and GUI operation. As you will probably have had experience on analogue consoles, you will already be familiar with most of the XL8 controls and their operation. Therefore, this chapter only deals with the GUI controls that may be new to you.

The navigational controls, such as quick access buttons and scroll buttons, are described in Chapter 6 "Navigation" on page 19, and the ones specifically for automation can be found in “Managing the scenes” on page 48.

About GUI operation

This section explains the basic procedures you can perform at the GUI screens. In general, you will control and operate the GUI by combining the operations described here.

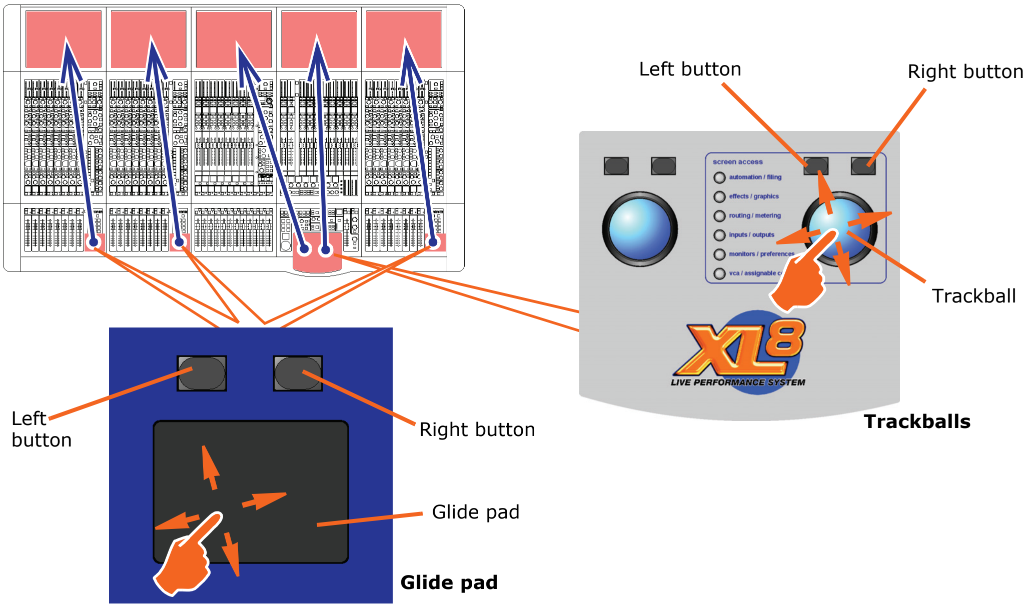

Left button
Right button
screen access
automation / filing
effects / graphics
routing / metering
inputs / outputs
monitors / preferences
Trackball
XL8
LIVE PERFORMANCE SYSTEM
Trackballs
Left button
Right button
Glide pad
Glide pad

Figure 5: Controlling the GUI

In the default configuration the left and right trackballs operate the mix and output bay GUI screens, respectively, and each glide pad operates its local input bay GUI (see Figure 5 “Controlling the GUI” on page 15). Move your finger on the trackball/glide pad to operate the pointer on its associated GUI screen. The left and right buttons above each trackball/glide pad have similar functionality to those on a PC/laptop mouse; the left button is used for click and drag operations, while the right one is generally used for editing and finer control operations.

Click

Moving the pointer to a specific point of the GUI screen and then pressing the left button is called "clicking". This is fundamental to GUI operation and forms the basis of many of its operations, such as switching a button on/off, selecting list and menu items, text editing etc. Doing the same with the right button is called "right-clicking".

Drag

Moving the pointer to a specific point of the GUI screen and then pressing the left button while moving the pointer up/down/left/right is called "dragging". Dragging is used mainly to adjust control knobs and faders, and to move sliders (attached to drop-down lists) — although it is also used to select blocks of connectors when patching.

Operating the GUI screen controls

This section shows you how to operate GUI screen elements, such as buttons, control knobs, drop-down lists and sliders.

>> To switch a GUI button on/off

Click the button. If it has a status indicator, this will illuminate/extinguish to show that it is on/off, respectively.

>> To adjust a GUI control knob or fader

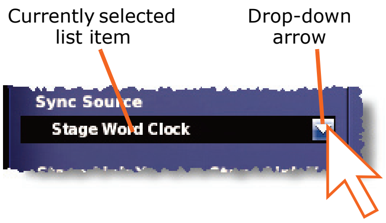
Use a drag operation. Move the pointer up/down/left/right for adjustment.

>> To select an option from a drop-down list

1 Click the drop-down arrow. The drop-down list will unfold to display some or all of its contents, depending on how many items it contains.

2 Do one of the following:

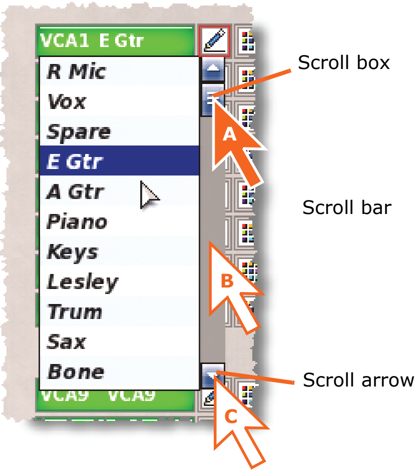
  - Click the option you require.
  - If necessary, scroll the list (see "To scroll a drop-down list" below) to display the option, and then click it.



>> To scroll a drop-down list

With the drop-down list displayed, do one of the following:

- **A** — Drag the scroll box.
- **B** — Click the scroll bar. The scroll box will 'jump' in the direction of the click to another position in the scroll bar.
- **C** — Click an up/down scroll arrow. The scroll box will 'jump' in the direction of the scroll arrow to another scroll bar position.

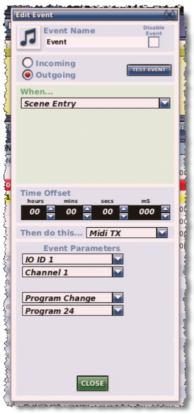


About windows

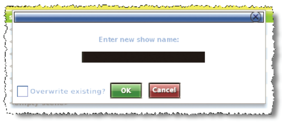
There are three main types of window you will encounter when using the GUI:

- **Properties** windows contain elements that you can select or edit, such as options, lists, tick boxes, text fields etc.
- **Message** windows contain text that can be a prompt or an error message. Generally, this type of window will contain a user-editable text field and **OK** and **CANCEL** buttons.
- **List** windows have a number of user-selectable options in the form of a list, and may include **OK** and **CANCEL** buttons.

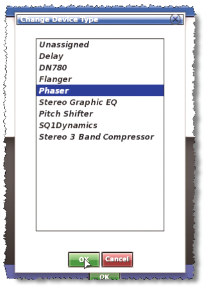
Similar to a window found on a PC running a Windows-based operating system, the window can be moved around the screen, which is useful if you need to see what is behind it. Also, each window has a close (X) button at its upper-right corner.


Edit Event
Event Name
Disable Event
Event
○ Incoming
● Outgoing
TEST EVENT
When...
Scene Entry
Time Offset
hours
mins
secs
mS
00
00
00
000
Then do this...
Midi TX
Event Parameters
IO ID 1
Channel 1
Program Change
Program 24
CLOSE

Properties window


Enter new show name:
☐ Overwrite existing?
OK
Cancel

Message window


Change Device Type
Unassigned
Delay
DN780
Flanger
Phaser
Stereo Graphic EQ
Pitch Shifter
SQ1Dynamics
Stereo 3 Band Compressor
OK
Cancel

List window

>> To close a window

Do one of the following:

- To acknowledge your changes, click **OK.**
- To cancel your changes, click **CANCEL.**
- Click "(X)" at the upper-right corner of the window.

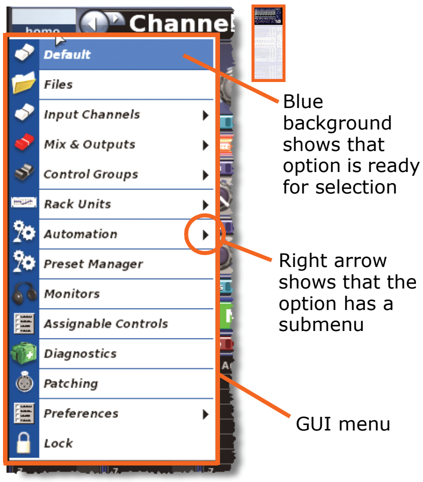
>> To move a window

Use drag, by clicking on the window's blue bar (top) and dragging the window where you want it.

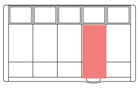
Using the GUI menu

The GUI main menu (shown right) is opened by clicking the **home** button, which is constantly displayed at the upper-left corner of all GUI screens. To select a submenu option, move the pointer over the arrow to the right of the menu option (the submenu will open automatically to the right of the arrow) and choose the option you want.

Note: *Throughout this guide, menu/submenu option selection sequences are shown in the following format:* ***home ▸ Preferences ▸ General*** *(for example, for choosing the general preferences screen).*

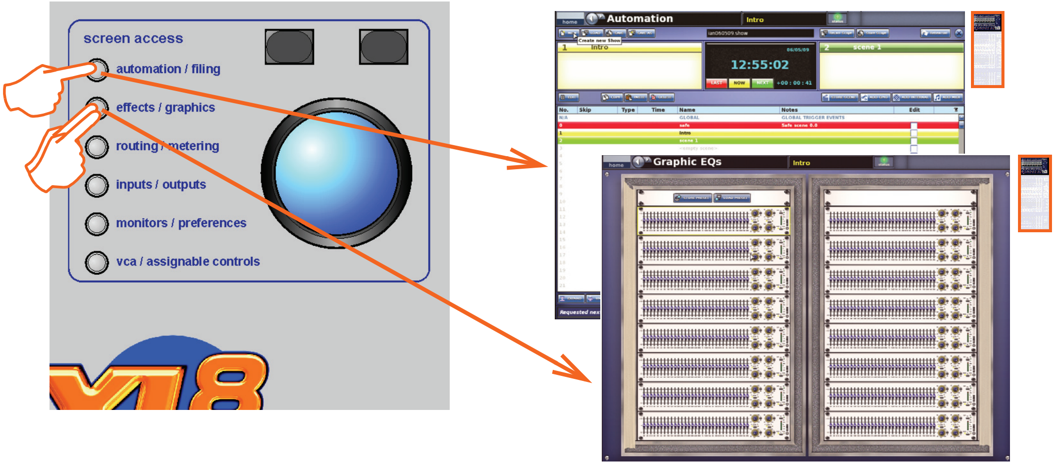

home
Channel
Default
Files
Input Channels
Mix & Outputs
Control Groups
Rack Units
Automation
Preset Manager
Monitors
Assignable Controls
Diagnostics
Patching
Preferences
Lock
Blue background shows that option is ready for selection
Right arrow shows that the option has a submenu
GUI menu

Opening a GUI menu screen via the control surface



You can open some of the GUI menu screens by using the buttons in the **screen access** section of the primary navigation zone. Each button provides direct access to two screens, as indicated by the adjacent text to its right.

Press the button to open the first screen mentioned, and press it again to open the other one. For example, press the **automation / filing** button to open the **Automation** screen or press the **effects / graphics** button twice to open the **Graphic EQs** screen (as shown in the following diagram).



Text editing

Use the pull-out keyboard (see "Pull-out keyboard" on page 10) when you want to enter/edit text on the output bay GUI screen. You can use the output bay's trackball to assist you, for example, you can highlight text using drag or use the copy and paste options in the right-click menu.

Note: *To use a keyboard on a different GUI screen, you will need to plug a USB keyboard into the appropriate front panel XL8 keyboard connector (see Figure 4 "Front and rear connectors on XL8 Control Centre" on page 9).*

>> To pull out/put away the keyboard

To manoeuvre the keyboard to its operating position, pull it out from underneath the output bay. A catch on the right of the keyboard will close to lock it in place.

After you have finished using the keyboard, lift up the catch to open it and push the keyboard back underneath the output bay.

>> To enter/edit text via the keyboard

1. At the GUI, click within the text box. This will place an insertion point in it; the pointer will change to an I-beam shape.
2. Using the keyboard, edit/type in the new text. You can edit existing text by using the right-click menu (see "Click" on page 16).
3. On the keyboard, press ENTER to exit the text box (or click on an empty area of the GUI screen). The pointer will change back to an arrow shape.

Chapter 6: Navigation

This chapter introduces you to XL8 navigation and shows you how to use the navigational tools of the XL8 Control Centre.

You can also use the GUI to assist in navigation. For information, refer to the XL8 Live Performance System Owner's Manual (part number DOC02-XL8).

For information on navigating the scenes in automation, see "Managing the scenes" on page 48.

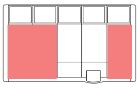
An introduction to XL8 navigation

The XL8 provides you with unique navigational controls to quickly and easily access the items, such as channels, buses, groups and detail areas, that you will require for mixing.

Navigation is an important feature of the XL8 Control Centre. One of the advantages digital consoles have over analogue ones is that their channel count is not limited by the control surface hardware. However, this means that only a certain amount of channels can be at the control surface at any time, while the others are 'hidden'. So, navigation is required to access these hidden channels whenever you need them.

Each bay has its own discrete set of channel controls, such as quick access buttons and LCD select buttons, to help you quickly navigate the channels and buses to bring the ones you need to the control surface and select them.

How the input channels are managed



Each input bay can handle a single bank of eight input channels at any time. There are a total of 12 banks that, between them, encompass the 96 inputs available. Input channels at the control surface are in ascending order from left to right.

To help you understand the operating principles of the XL8 it may be best to visualise the control surface as if it were an analogue one, that is, in two dimensions with all 96 input channels laid out side by side. In this case all input channels are visible all of the time and would look something like the one in Figure 6 (a massive beast!).

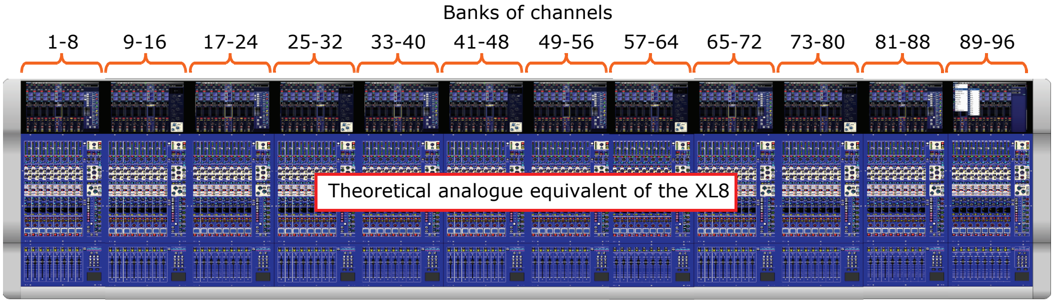
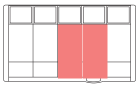


Figure 6: Theoretical analogue equivalent of the XL8 Control Centre

However, in reality the XL8 Control Centre has only five GUI screens and, in the standard configuration, only three of these are allocated to the input channels (the other two being used for the mix and output bay displays), so you can view up to 24 input channels at any time.

How the output channels are managed



All output channels, except masters, are paired and managed in banks of 16 (eight pairs per bank). The mix and output bays have eight dual-channel fast strips each. The ones in the mix bay are for auxes (32) and returns (16), and the ones in the output bay are for matrices (16). The output bay also houses the thee master channels (two stereos and a mono). Both bays use the channel strip in the mix bay.

In the standard XL8 configuration the outputs are displayed on the mix bay GUI screen, 16 at a time.

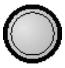
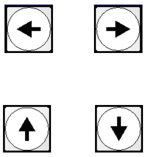
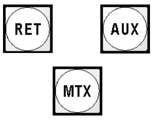
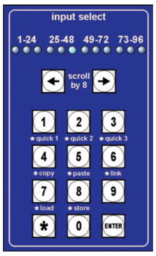
How the mix buses are managed

All mix buses are initially in mono pairs, but can each can be stereo linked. The mix buses on each input channel comprise 32 auxes and 16 matrices, while the output channels have 16 returns and 32 auxes each. The mix bus navigational controls are located towards the bottom of their respective channel strips.

About the navigational controls

The XL8 navigational controls can be broadly divided into two main areas: those that operate the channels currently populating the control surface (quick access buttons and LCD select buttons) and the ones that navigate channels to/from the control surface (scroll buttons and output select buttons) — although there may be some overlap.

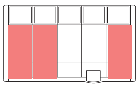
Table 1: Description of the navigational controls

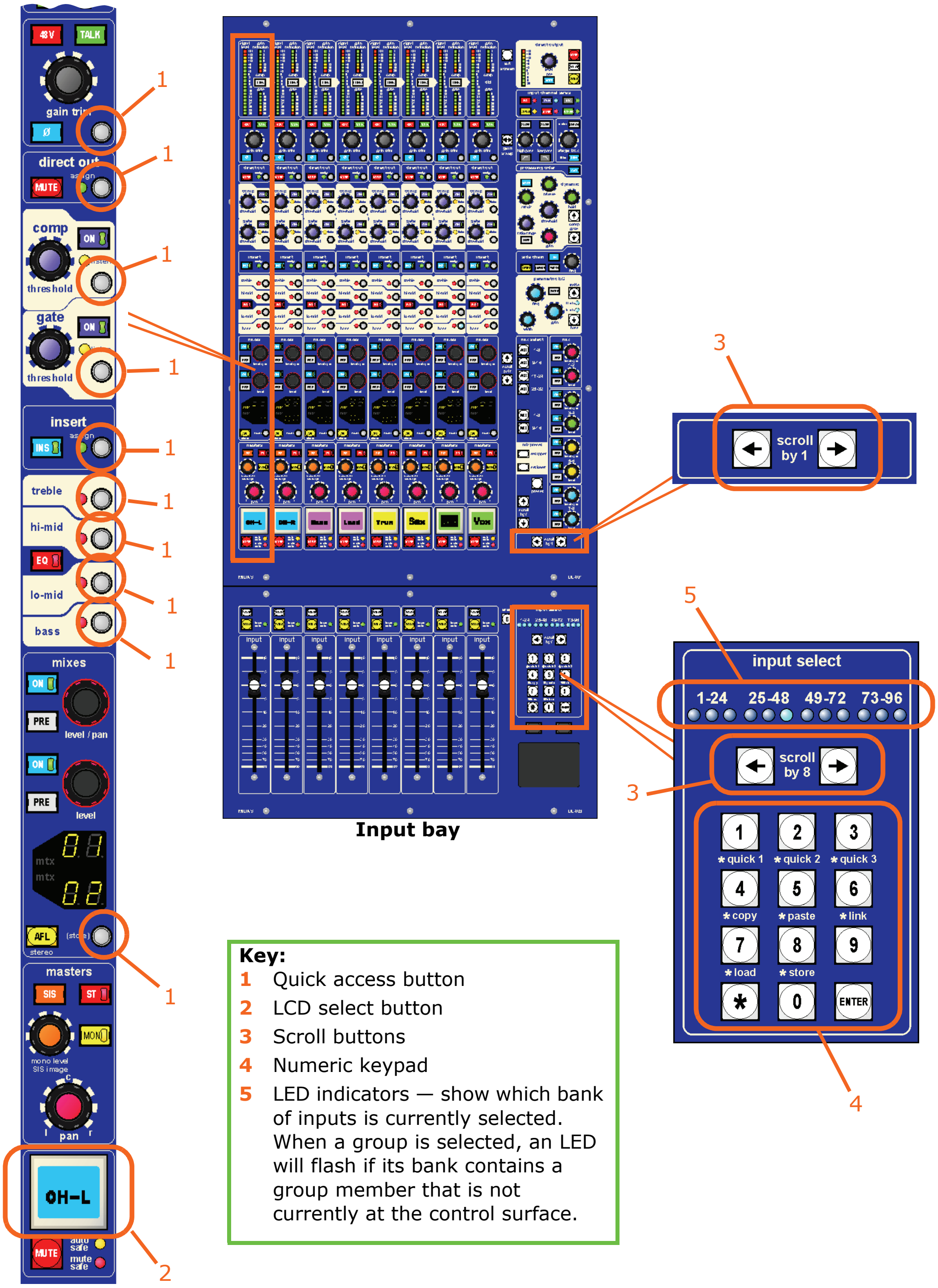
Type	*Description*	*Example(s)*
Quick access button	Quickly selects the local area, such as a channel, mix bus or detail area. The buttons, which are round and translucent, illuminate (blue) when active.	
LCD select button	Selects the local channel/mix/group. The buttons have a user-configurable backlit LCD display that provides useful feedback, such as name and type. When selected, the display changes to a 'negative' image.	
Scroll button	Grouped in pairs, these buttons scroll through the channels and mix buses, changing selection. The direction of scrolling matches the analogue convention, where channels are left/right and mixes are up/down. The scrolling action of the buttons (or the number of channels/buses scrolled per press) varies according to button location. The buttons are translucent and have a blue backlight that illuminates when pressed.	
Bank select button	Navigates its associated bank (mix bus or output channel) to the control surface. The buttons are translucent and have a blue backlight that illuminates when pressed; the backlight stays on to show you which bank is currently populating the control surface.	
input select section	Navigates a single channel to the control surface, which is generally used for rectifying a fault on a problem channel. For location, see Figure 7 "Input bay navigational controls (channel)" on page 21.	 input select 1-24 25-48 49-72 73-96 scroll by 8 1 2 3 quick 1 quick 2 quick 3 4 5 6 copy paste link 7 8 9 load store 0 ENTER

Some of the controls, such as control knobs in the input fast strips, are sensitive to touch and will select the local channel when operated.

Location of the navigational controls

This section shows the position of the control surface navigational controls per bay.




48V
TALK
gain trim
ø
direct out
assign
MUTE
comp
ON
threshold
gate
ON
threshold
insert
assign
INS
treble
hi-mid
EQ
lo-mid
bass
mixes
ON
PRE
level / pan
ON
PRE
level
mtx
mtx
AFL
stereo
masters
SIS
ST
MONO
mono level
SIS image
pan
OH-L
MUTE
auto safe
mute safe
1
1
1
1
1
1
1
1
1
1
2
Input bay
scroll by 1
3
5
input select
1-24
25-48
49-72
73-96
scroll by 8
3
1
quick 1
2
quick 2
3
quick 3
4
copy
5
paste
6
link
7
load
8
store
9
*
0
ENTER
4

Key:

1 Quick access button

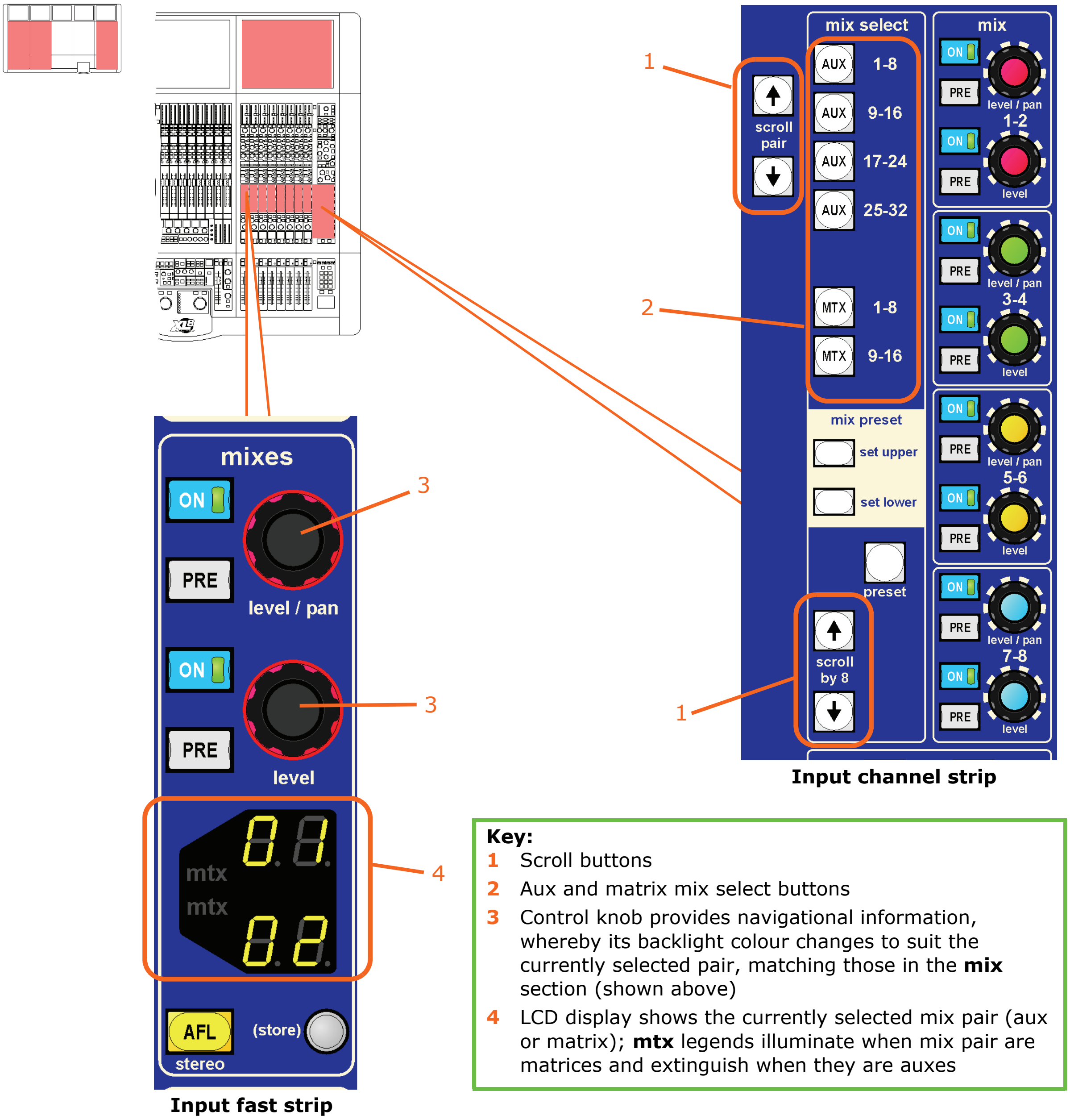
2 LCD select button

3 Scroll buttons

4 Numeric keypad

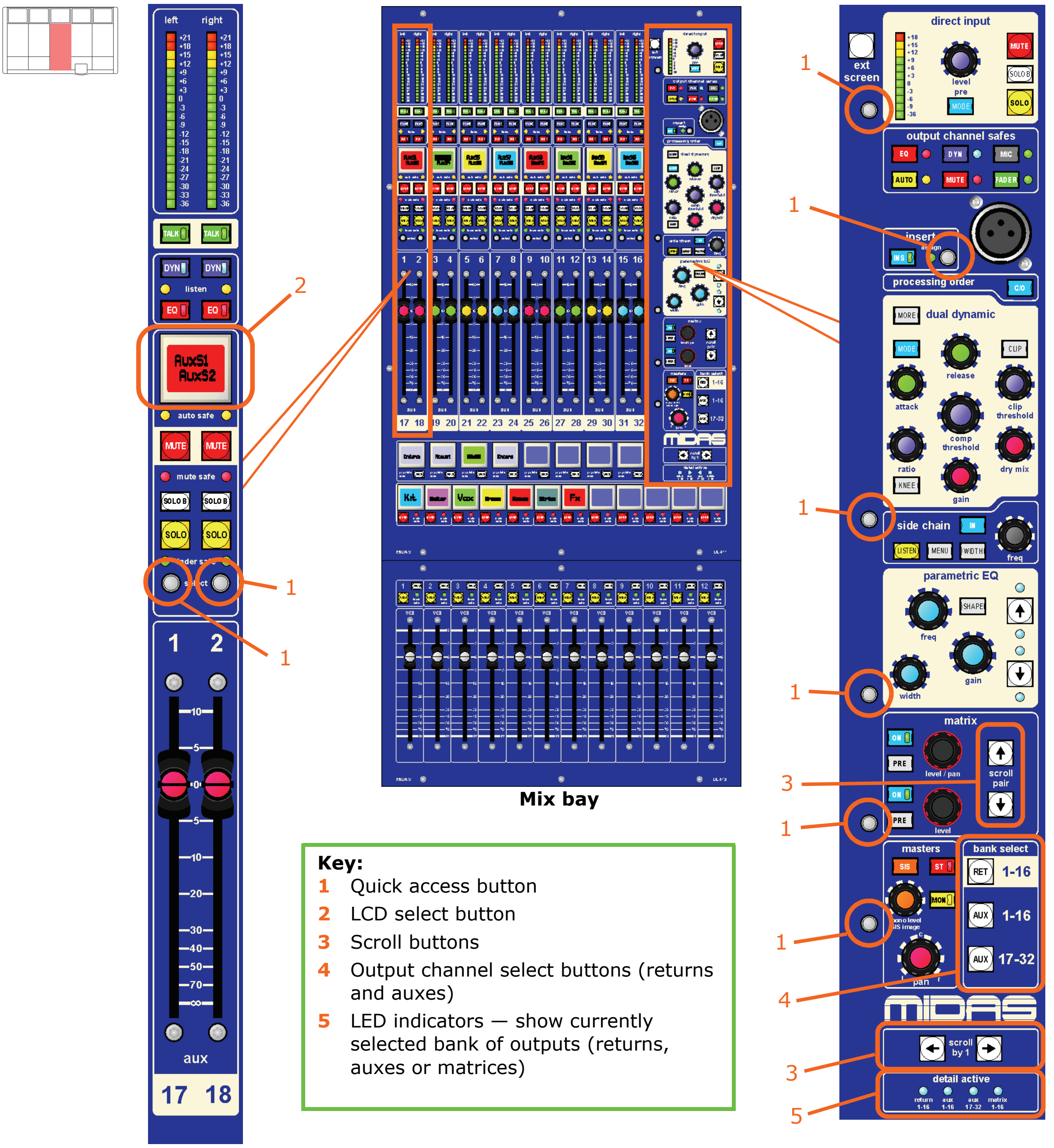
5 LED indicators — show which bank of inputs is currently selected. When a group is selected, an LED will flash if its bank contains a group member that is not currently at the control surface.

Figure 7: Input bay navigational controls (channel)


1
2
3
3
4
1
mix select
AUX 1-8
AUX 9-16
AUX 17-24
AUX 25-32
MTX 1-8
MTX 9-16
scroll pair
mix preset
set upper
set lower
preset
scroll by 8
mix
ON
PRE
level / pan
1-2
level
3-4
5-6
7-8
mixes
ON
PRE
level / pan
ON
PRE
level
mtx
mtx
01
02
AFL
stereo
(store)
Input channel strip
Input fast strip

Key:
1 Scroll buttons
2 Aux and matrix mix select buttons
3 Control knob provides navigational information, whereby its backlight colour changes to suit the currently selected pair, matching those in the **mix** section (shown above)
4 LCD display shows the currently selected mix pair (aux or matrix); **mtx** legends illuminate when mix pair are matrices and extinguish when they are auxes

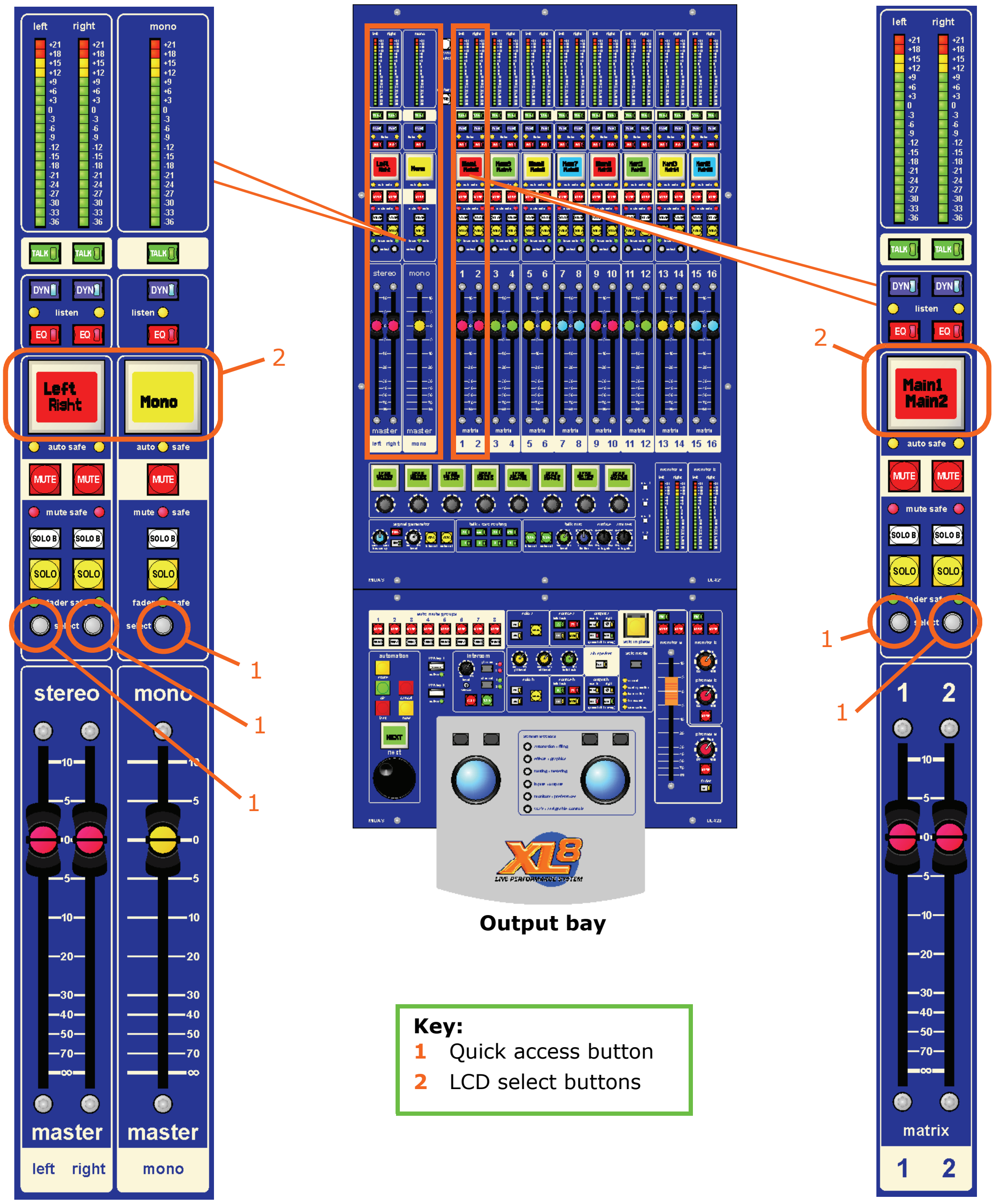
Figure 8: Input bay navigational controls (mix bus)


Mix bay
1
2
3
4
5
left
right
TALK
DYN
listen
EQ
AuxS1
AuxS2
auto safe
MUTE
mute safe
SOLO B
SOLO
select
1 2
aux
17 18
ext screen
direct input
level
pre
MODE
output channel safes
EQ
DYN
MIC
AUTO
MUTE
FADER
insert
INS
processing order
C/O
MORE
dual dynamic
CLIP
release
attack
clip threshold
comp threshold
ratio
dry mix
KNEE
gain
side chain
IN
LISTEN
MENU
WIDTH
freq
parametric EQ
SHAPE
freq
gain
width
matrix
ON
PRE
level / pan
scroll pair
level
masters
SIS
ST
MON
mono level SIS image
pan
bank select
RET
1-16
AUX
1-16
AUX
17-32
scroll by 1
detail active
return 1-16
aux 1-16
aux 17-32
matrix 1-16

Key:

1. Quick access button
2. LCD select button
3. Scroll buttons
4. Output channel select buttons (returns and auxes)
5. LED indicators — show currently selected bank of outputs (returns, auxes or matrices)

Figure 9: Mix bay navigational controls


left
right
mono
TALK
DYN
listen
EQ
Left Right
Mono
auto safe
MUTE
mute safe
SOLO B
SOLO
fader safe
select
stereo
mono
master
left right
mono
Main1 Main2
matrix
1 2
1
2
XL8
LIVE PERFORMANCE SYSTEM
Output bay

Key:

1 Quick access button

2 LCD select buttons

Figure 10: Output bay navigational controls

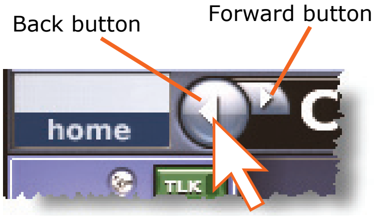
About GUI navigation

While the control surface provides instant, one-button access to many controls, the GUI provides an alternative way of navigating the XL8 and offers some unique methods of its own. The GUI menu gives you access to all of the screens that you will need and you can even navigate backwards/forwards through the screens that you have recently opened.

Don’t forget that you can access some of the GUI screens directly by using the buttons in the ***screen access*** *panel of the primary navigation zone (see “Opening a GUI menu screen via the control surface” on page 18).*

>> To find a GUI screen that you recently opened

Use the back/forward browser buttons to do one of the following:



- To return to the GUI screen you just opened, click the back button (as shown right).
- To open one of the GUI screens you have recently visited, click the back/forward buttons. The back button will take you back through your browser history, while the forward button goes the opposite way.

The back/forward buttons, which are always to the right of the **home** button, are similar to those on standard browsers found on any PC.

How to navigate

This section shows you how to navigate the channels, mixes and groups, and select the ones you want. Refer to "Location of the navigational controls" on page 21 throughout this section.

Navigating channels and mix buses to the control surface

There are a number of ways you can navigate channels and mix buses to the control surface, particularly by using the scroll buttons.

>> To navigate a bank of channels to the control surface

Do one of the following:

- To navigate a bank of input channels to the control surface, press the **scroll by 8** left/right arrow buttons in the **input select** section (input channel strip).
- To navigate a bank of output channels to the control surface, press a **RET** or **AUX** button in the **bank select** section of the mix bay channel strip

>> To navigate a bank of mix buses (inputs only) to the control surface

Do one of the following in the **mix select** section (input channel strip):

- Press an **AUX** or **MTX** button.
- Press the **scroll by 8** up/down arrow buttons.

>> To navigate to a specific channel

Do one of the following:

- To navigate to an input channel, press the **scroll by 1** buttons (towards bottom of input bay channel strip).
- To navigate to an output channel, press the **scroll by 1** buttons (bottom of mix bay channel strip).

>> To navigate to a pair of mix buses

Do one of the following:

- In an input channel, press the **scroll pair** up/down arrow buttons (left of **mix select** section in input channel strip).
- In an output channel, press the **scroll pair** up/down arrow buttons (**matrix** section of mix bay channel strip).

Selecting channels, mix buses and groups

There are a number of ways you can select a channel/mix bus from those currently populating the control surface, particularly by using the quick access buttons and LCD buttons.

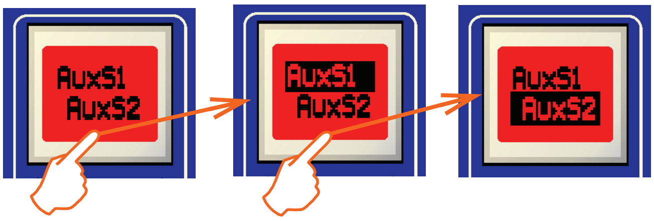
>> To select an input channel

Press its LCD select button or any of its quick access buttons.

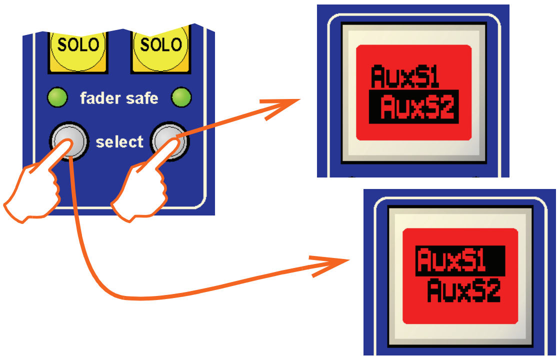
>> To select an output channel

In the mix or output bay, do one of the following:

- To select the left channel of the pair, press its LCD select button. To select the right channel, press it again. For example, press the LCD select button to select aux 1 (**AuxS1**) and press it again to select aux 2 (**AuxS2**).



- Press its **select** quick access button. The left button selects the left channel (always odd numbered) and the right button selects the right one (always even numbered).



>> To select a mix bus

In the **mix** section of the input channel strip, operate the control knob of the mix bus you want. The control knobs are touch-sensitive.

>> To select a group (VCA/POP)

Press the LCD select button of the VCA/POP group you want.

Selecting a detail area

To select the detail area of a channel, press its local quick access button. This will select the channel and assign the detail area to the associated channel strip (control surface and GUI).

Fault finding a problem input channel

If you know the number of the input channel that has a problem, you can quickly navigate it to the control surface by typing in its number.

>> To navigate a channel using its number

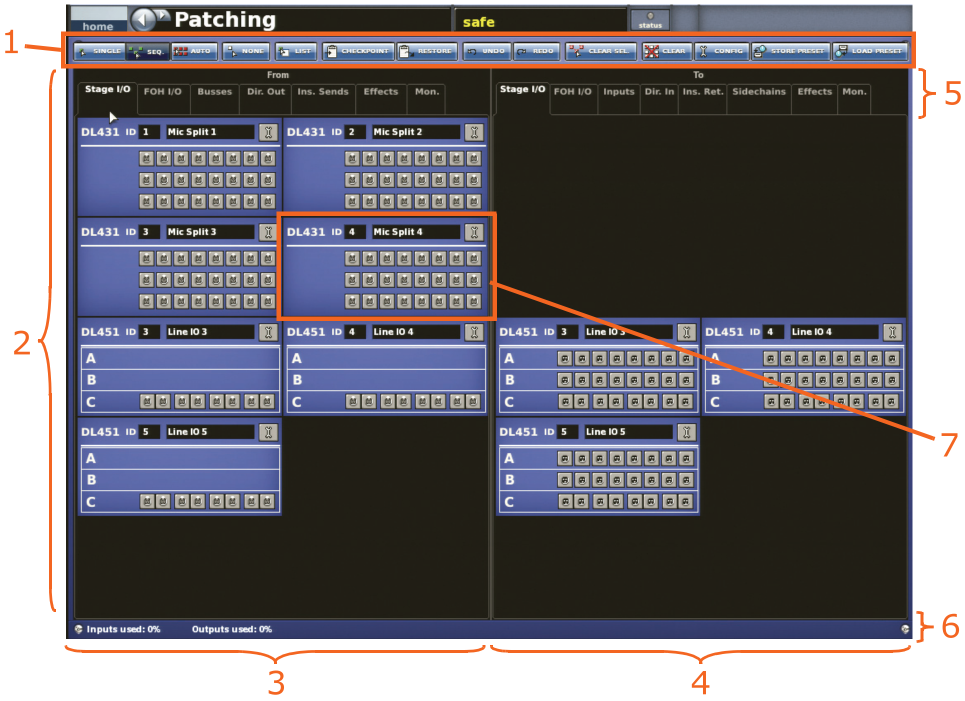
1. In the **input select** section of the input bay, type in the channel’s number. For example, press **4** and then **7** for channel 47.
2. Press **ENTER.**

Chapter 7: Patching

This chapter describes the patching function of the XL8.

Introduction

The patching function is fundamental to XL8 operation as, until the I/Os have been correctly patched, you won’t get any audio. Patching is done entirely at the **Patching** screen, which is an option in the GUI menu. This screen lets you carry out all the routing requirements of the XL8 by providing an easy-to-use interface, where you can select your source and destination patching options, facilitated by a panel of function buttons. Additionally, the **Patching** screen lets you set up the units (devices). For example, you can adjust the analogue gain, select +48V phantom voltage etc., of the line I/O units connected to the system.


home
Patching
safe
status
SINGLE
SEQ.
AUTO
NONE
LIST
CHECKPOINT
RESTORE
UNDO
REDO
CLEAR SEL.
CLEAR
CONFIG
STORE PRESET
LOAD PRESET
From
Stage I/O
FOH I/O
Busses
Dir. Out
Ins. Sends
Effects
Mon.
To
Stage I/O
FOH I/O
Inputs
Dir. In
Ins. Ret.
Sidechains
Effects
Mon.
DL431 ID 1 Mic Split 1
DL431 ID 2 Mic Split 2
DL431 ID 3 Mic Split 3
DL431 ID 4 Mic Split 4
DL451 ID 3 Line IO 3
DL451 ID 4 Line IO 4
DL451 ID 5 Line IO 5
DL451 ID 3 Line IO 3
DL451 ID 4 Line IO 4
DL451 ID 5 Line IO 5
A
B
C
Inputs used: 0%
Outputs used: 0%
1
2
3
4
5
6
7

Item	***Description***
1	Function button panel, contains the function buttons that enable patching and device configuration (see “Patching screen function buttons” on page 28).
2	Patching area, contains all of the patch connectors on tabs.
3	**From** section, contains a number of tabs that house all of the patch connector sources.
4	**To** section, contains a number of tabs that house all of the patch connector destinations.
5	Section titles and tab names.

Item	*Description*
6	Status bar that shows the patching status of the inputs and outputs as a percentage.
7	A pictorial representation of a physical device.

Patching screen function buttons

The function panel buttons of the **Patching** screen are described in the following table. When a button is selected, its background colour changes to a lighter shade.

Legend	*Description*
SINGLE	Lets you patch a single source to a single destination or multiple destinations. See "Single patching (SINGLE)" on page 32.
SEQ.	Lets you select multiple sources and then patch them one by one to their destinations. With this method, each source can only have one destination. See "Sequence patching (SEQ.)" on page 32.
AUTO	Lets you select a block of sources and patch them all automatically in one go, simply by selecting a single destination. Any existing patches within the destination range will be replaced by the new ones.
NONE	Clears all currently selected patch connectors from all tabs in the **From** and **To** sections.
LIST	Changes the tooltip type from standard to list to help with sequence patching. This is only available when **SEQ.** is on.
CHECKPOINT	Sets a patching store point, or snapshot, that contains the patching status at that instant. There is only one checkpoint available, so each time **CHECKPOINT** is clicked the previous checkpoint is overwritten.
RESTORE	Reverts patching status to the last checkpoint or, if no checkpoints have been created, it will revert patching status to the power up condition. All patching done in the intervening period will be lost.
UNDO	Undoes the latest single patch, even if it was part of a multiple patching operation. Repeated clicks will undo the preceding patching operations, going back to the last checkpoint, or power up if no checkpoints have been created.
REDO	Redoes an undo. This can be repeated for each undo in the previous undo operation.
CLEAR SEL.	Clears all current selections and their patches. **Important:** **Unlike the NONE button, which merely removes the current selections (highlighted in yellow), CLEAR SEL. goes a step further by removing the patch as well. This will stop any audio that may have been going through the patched signal.**
CLEAR	Clears all patching. **Important:** **Exercise great caution when using this function. Observe the warning that appears after clicking this button.**
CONFIG	Opens the **AES50 Device Configuration** window, from where you can configure the device.

About the patching procedure

Although patching can be thought of as routing/rerouting the console’s incoming, internal and outgoing signals, in the context of the **Patching** screen, patching also encompasses the setting up and configuration of the devices. The patching procedure is initially carried out after system installation (see Chapter 9 "Setting Up The System" on page 61 of the operator manual) and comprises:

- **Device configuration:** Configure the devices by adjusting their parameters as necessary (see below).
- **Snake selection:** Configure the XL8 according to the type of ‘snake’ you are using for the X and Y networks (see “Configuring the XL8 with the snake type” on page 30). **This is important, as the XL8 Control Centre will not work unless the snake type is correctly configured.**
- **Setting up the I/O rack devices:** Set up the system devices, such as line I/O and mic splitter, on the I/O tabs in the **From** and **To** sections of the **Patching** screen (see “Setting up the I/O rack devices” on page 30).
- **Patching:** Carry out all of the required routing, for example, mics to input channels (see “How to patch” on page 31).

Configuring the devices

You have the option to configure the devices via the **Patching** screen. Parameters, such as gain and +48V phantom voltage, can be set via a device-specific configuration window.

These configuration settings can be independent of channel data, as (until patched) they only control the physical unit. If a device is subsequently patched to one or more channels, the channel(s) control the device, and vice-versa.

The device configuration window also allows control of audio parameters when the device is used as a direct connection to another device, for example, FOH to stage via a digital snake, instead of through the DSP. In this case the settings are also saved in the show file and can be automated, even though the signals are not routed through the control centre DSP.

As the mic splitter control conforms to the **DL431 Mic Splitter Inputs** options (**Use A Inputs** or **Use B Inputs**) in the **Configuration Preferences** section of the **Preferences** screen, it is not possible to control both the A and B settings on the mic splitter from a single console.

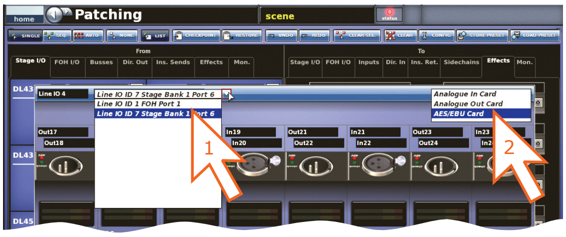
>> To open the configuration window of a device

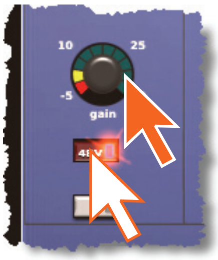
Click the device’s spanner button (upper right corner of device).

>> To set up/change the configuration of a device

1 In the device configuration window, choose the device from the drop-down list. For example, the FOH line I/O device (ID11) connected to port 2.

2 From the drop-down list at the upper-right corner of the window, choose the card/channel. For example, the “AES/EBU Card”.


home
Patching
scene
status
SINGLE
SEQ.
AUTO
NONE
LIST
CHECKPOINT
RESTORE
UNDO
REDO
CLEAR SEL.
CLEAR
CONFIG
STORE PRESET
LOAD PRESET
From
Stage I/O
FOH I/O
Busses
Dir. Out
Ins. Sends
Effects
Mon.
To
Stage I/O
FOH I/O
Inputs
Dir. In
Ins. Ret.
Sidechains
Effects
Mon.
DL43
Line IO 4
Line IO ID 7 Stage Bank 1 Port 6
Line IO ID 1 FOH Port 1
Line IO ID 7 Stage Bank 1 Port 6
Analogue In Card
Analogue Out Card
AES/EBU Card
Out17
Out18
In19
In20
Out21
Out22
In21
In22
Out23
Out24
In23
DL43
DL45
1
2



3. In a channel, configure its parameters. For example, in channel "In1" adjust the gain and switch on the +48V phantom voltage (shown right).

   Repeat for the other channels in the card as necessary.
4. Repeat step 2 and step 3 for the other cards as necessary.
5. If necessary repeat step 1 to step 4 for any other devices of the same type.
6. Click **OK.**

Configuring the XL8 with the snake type

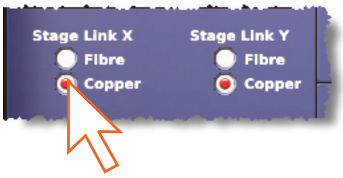
Important:
The XL8 must be configured with the correct snake type before operation. The XL8 will not pass control data or audio if the snakes are not properly configured.

The 'snake' connects the XL8 Control Centre to the DL461 Router. There are two snakes, one each for the X and Y routers, and they can be either copper or fibre-optic types. Before operation, you must configure the XL8 with the correct type, which is done via the GUI menu.

>> To configure the XL8 with the snake type information

1. At the GUI, choose **home** ▸ ***Preferences*** ▸ ***General.***
2. Under the **Stage Link X** heading in the **Configuration Preferences** section, choose the type of snake fitted to the X network. For example, click the **Copper** option (shown right). A selected option will contain a red circle.

   Repeat for the Y network, under the **Stage Link Y** heading.



Setting up the I/O rack devices

You can add, remove and set up the devices, such as line I/Os, mic splitters, DN9696s etc., that are connected to the Stage I/O and FOH I/O racks. This is done via the **AES50 Device Configuration** window, which is opened by clicking **CONFIG.** Here, you can set up the device's ID and also the type of cards (modules) fitted in the physical unit. Some of the device fields may be blank, as they are dependent on the device type.

>> To add a device or change its set up

1. Click **CONFIG.**
2. In the **AES50 Device Configuration** window, click the port you want to allocate the device to; these are listed in the far left of the window. For example, choose "FOH Port 3 (unused)". The text in the **device type:** field will change accordingly. Ports that don't have a device allocated to them it will have the text "unused" inside the brackets after their name.
3. In the **device type:** drop-down list, click the type of device. For example, choose "Line IO".

4 In the **device ID:** drop-down list, click the ID you want for the device. For example, choose "ID3".

5 In the **device options:** drop-down list(s), choose the type of each card fitted in the physical unit. For example, choose "Analogue 8 Input".

Repeat for any other cards.

6 Click **OK.**

How to patch

Patching, basically, involves selecting the source patching connectors in the **From** section of the **Patching** screen and then selecting their destination(s) in the **To** section. You can select patches singly, or in multiples by using the sequence and automatic operations.

>> To open a tab in the From or To sections

Click the tab title. For example, **Ins. Sends** (insert sends).

>> To select a single patch connector

Click the patch connector. The effects of clicking a patch connector are shown in the following table.

Table 2: Effects of clicking a patch connector

Click	*To do this in the From section*	*To do this in the To section*
⬛	Select the patch the connector (🟨).	Will do one of the following (provided a source patch connector(s) has been selected in the **From** section): • Select the patch connector (🟨) during a single patching operation. • Patch the patch connector (🟩) during either a sequence or an automatic patching operation. Otherwise, this has no effect.
🟨	Deselect the patch connector, which then reverts to its previous state (patched ⬛ or unpatched 🟩).	Remove the patch (⬛).
🟩	Select the patch connector (🟨) and all the ones it is patched to in the **To** section. (A green triangle under a tab title shows that its tab contains one or more selected patch connectors.)	Remove the patch (⬛).

To quickly check the destinations of a source patch connector, click it. This will select it and all of its destinations. A green triangle will appear under the name of any tab in the ***To*** *section that contains a destination(s).*

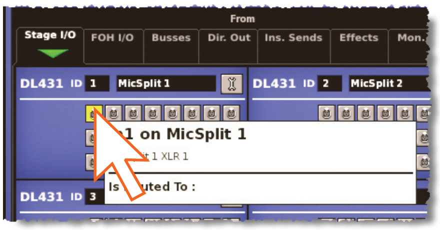
Single patching (SINGLE)

The **SINGLE** function button allows you to patch a single source to a single destination or multiple destinations.

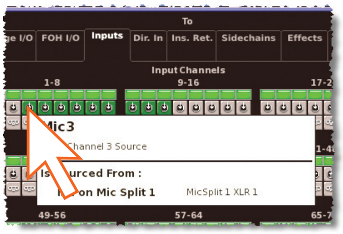
>> To patch a single source to a single destination

The following example shows you how to patch an output from a mic splitter to an input channel.

1. Click **SINGLE.**
2. In the **From** section, click the source patch connector. For example, choose the first patch connector of a mic splitter. Its background will change to yellow and a green triangle will appear under the tab title.


From
Stage I/O
FOH I/O
Busses
Dir. Out
Ins. Sends
Effects
Mon.
DL431 ID 1 MicSplit 1
DL431 ID 2 MicSplit 2
DL431 ID 3
1 on MicSplit 1
it 1 XLR 1
Is uted To :

3. Click the destination patch connector. For example, in the **Inputs** tab of the **To** section, choose input channel 3 (Mic3). It will now be patched to the source. If the new patch is carrying a signal, this audio may be heard, depending on the settings of the XL8 Control Centre.


To
ge I/O
FOH I/O
Inputs
Dir. In
Ins. Ret.
Sidechains
Effects
Input Channels
1-8
9-16
17-2
Mic3
Channel 3 Source
1-4
Is urced From :
on Mic Split 1
MicSplit 1 XLR 1
49-56
57-64
65-7

4. Click the source patch connector (**From** section) again to complete the patch.

   This can also be done by starting another single patch operation or by selecting another destination patch connector in the **To** section.

Note: *You can also carry out single patching operations using the **CLEAR SEL.** and **AUTO** functions.*

>> To patch a single source to multiple destinations

1. Patch the source patch connector to its first destination (see "To patch a single source to a single destination" on page 32).
2. In the **To** section, select the other destinations.

Sequence patching (SEQ.)

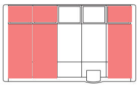
If you need to do a number of patches, and each has only a single destination, you can use the sequence function by pressing **SEQ.** All of the source patch connectors are selected in the **From** section before patching them, one by one, in the **To** section. This saves you having to go back to the **From** section for the start of each patch. You can change the tooltip to the list type by clicking the **LIST** button (see "Patching screen function buttons" on page 28) to help you.

Chapter 8: Basic Operation

This chapter is intended to familiarise you with the XL8 Control Centre by showing you how to carry out some basic operations in order to get some audio out of it.

***Note:** The following input bay operations can be carried out at any input bay.*

Setting a mic amplifier's input gain



The XL8 Control Centre has two input gains per channel, one is the remote gain for the analogue mic pre (stage box gain) and the other is the digital trim (console gain). In its default state, the stage box gain is in the channel strip and the console gain is in each input fast strip. However, you can swap these sections over (by using the **gain swap**/ **[SWAP]** button) to give you a more global control of the stage box gain.

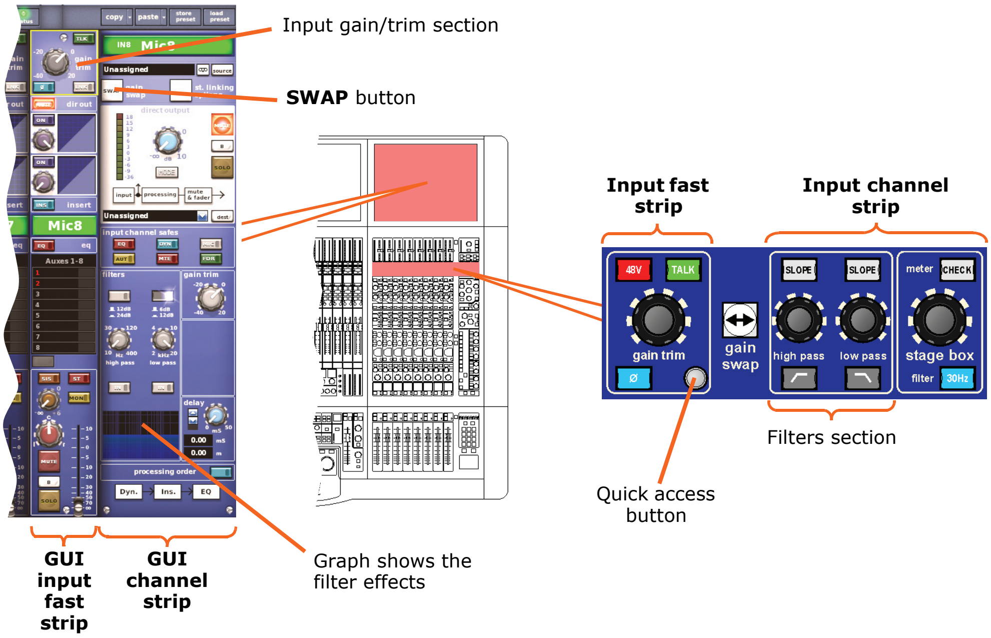
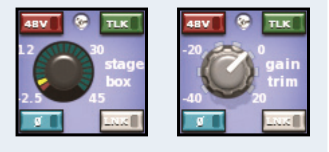

Input gain/trim section
SWAP button
Input fast strip
Input channel strip
48V
TALK
gain trim
Ø
gain swap
SLOPE
SLOPE
high pass
low pass
meter
CHECK
stage box
filter
30Hz
Filters section
Quick access button
Graph shows the filter effects
GUI input fast strip
GUI channel strip

Figure 11: Gain and filters sections of the input strips

***Note:** The **gain trim** control knobs in each input fast strip will adjust whatever has been 'swapped' to their respective strips. The **stage box** control knob in the input channel strip always controls the alternative 'swap' to the ones shown in the GUI input fast strips.*

>> To set the gain of the stage box/console

1 In the **gain trim** section of an input fast strip, press the quick access button. This selects the input channel and assigns its configuration detail area to the GUI channel strip (shown above), which contains the **SWAP** (gain swap) button.



2 Press the left/right arrowed **gain swap** button. This swaps console digital trim to stage box input gain (and vice versa). The diagram right shows the two types of gain that can appear in the input gain/trim section at the top of each GUI input fast strip.

3 Adjust the **gain trim** control knob to set the stage box input gain (2.5dB steps for the DL431 Mic Splitter and DL443 Analogue Jack I/O Module, and 5dB steps for the DL451 and DL351 Modular I/Os). Range is shown on the GUI.

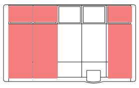
Adjust level to suit the Midas pre-amp characteristic; a suitable level could be one that only just illuminates the yellow LEDs. Drive the mic amps for that 'Midas colouration' — feel free to overdrive if you want.

4 After you have achieved the required gain state, press the left/right arrowed **gain swap** button again to swap back to console digital trim.

5 Adjust the **gain trim** control knob to set the console digital trim (gives +20dB to -40dB continuous trim) for preferred gain structure.

6 Set analogue remotes for initial set-up, then adjust digital trim for showtime.

Setting the high and low pass filters



When switched in, the high and low pass filters have two settings each, selectable via their respective **SLOPE** button. These filters can also be set via the GUI.

>> To set a filter

1 In the **gain trim** section of an input fast strip (see Figure 11, "Gain and filters sections of the input strips," on page 33), press the quick access button. This selects the input channel and assigns its configuration detail area to the GUI channel strip (shown above), which contains the **filters** section.

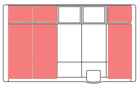
2 In the **filters** section of the input channel strip, press the filter select button (**high pass** ⌐ or **low pass** ¬) to switch the filter in.

3 If necessary press the filter's **SLOPE** button to set its slope (dB); its status is shown on the GUI. For the high pass filter, in = 24dB and out = 12dB, and for the low pass filter, in = 12dB and out = 6dB.

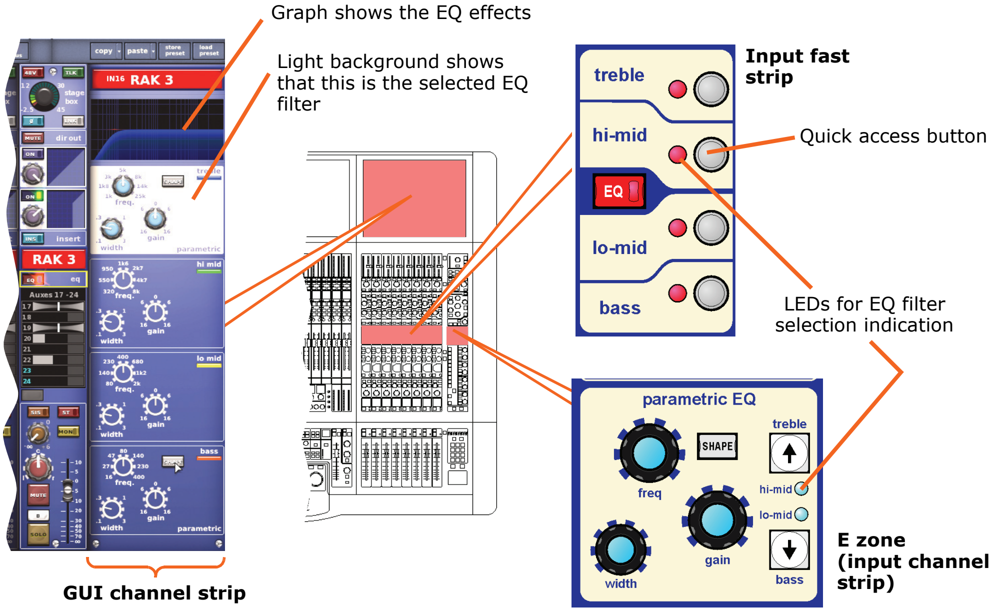
4 Adjust the **high pass**/**low pass** control knob to set filter frequency (Hz). The ranges are 10Hz to 400Hz for the high pass filter and 2kHz to 40kHz for the low pass filter.

Important:
Stage box hi pass — the remote stage box contains a 12dB/Oct 30Hz filter. It is recommended that this is used at all times for optimum A/D performance. However, it may be bypassed if extremely low frequency performance is required, for example, when testing the system.

Input equalisation (E zone)



Use EQ to equalise the input signal via the treble, hi-mid, lo-mid and bass filters, which are in the input channel strip's E zone. Treble and bass each have a parametric filter option with three specific shelving modes. Visual feedback for EQ is via GUI screen only, which also has a graphical representation of the filter.


Graph shows the EQ effects
Light background shows that this is the selected EQ filter
GUI channel strip
RAK 3
IN16 RAK 3
treble
parametric
hi mid
lo mid
bass
freq.
width
gain
Input fast strip
treble
hi-mid
EQ
lo-mid
bass
Quick access button
LEDs for EQ filter selection indication
parametric EQ
SHAPE
freq
gain
width
treble
hi-mid
lo-mid
bass
E zone (input channel strip)

>> To EQ the input signal

1. In the desired input fast strip, press **EQ** to switch the EQ in. This also selects the channel and assigns the EQ detail area to the GUI channel strip.

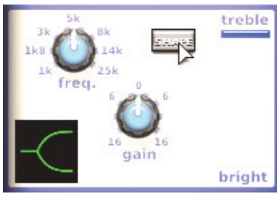
2. Do one of the following to select the EQ band:

   - In the input fast strip, press the quick access button of the desired band.
   - In the E zone, press the **treble**/**bass** up/down arrow buttons until the button/LED of the desired band is illuminated.

   On the GUI the currently selected EQ band will have a light coloured background. For example, **treble** in the above diagram.

3. In the E zone, adjust the **freq**, **width** and **gain** control knobs to apply EQ as desired.

4. If you have selected **treble** or **bass,** press **SHAPE** (E zone) to cycle through the different shelving modes so that you can audition them. These are the 'minimum harmonic disruption' types, which are only available for **treble** (bright, classic and soft) and **bass** (deep, classic and warm). For example, the **bright** shelving mode of the **treble** band (shown right) as displayed on the GUI.


treble
5k
3k
8k
1k8
14k
1k
25k
freq.
0
6
6
16
16
gain
bright

   Alternatively, you can click the desired **SHAPE** button in the GUI channel strip.

Note: **bright** *and* **deep** *use psychoacoustic phenomena to generate steep slopes that sound natural. These filters are called "minimum harmonic disruption filters".*

Input dynamics processing (D zone)

This section deals with assigning compressor and gate dynamics processors using the controls in the input channel strip's D zone. There are four compressors available — corrective, adaptive, creative and vintage — each with the option of hard knee, medium knee and soft knee. Visual feedback for both compressor and gate is provided by meters in each input fast strip, the dashboard screen and just above/below the graph, which gives a representation of the compressor/gate action.

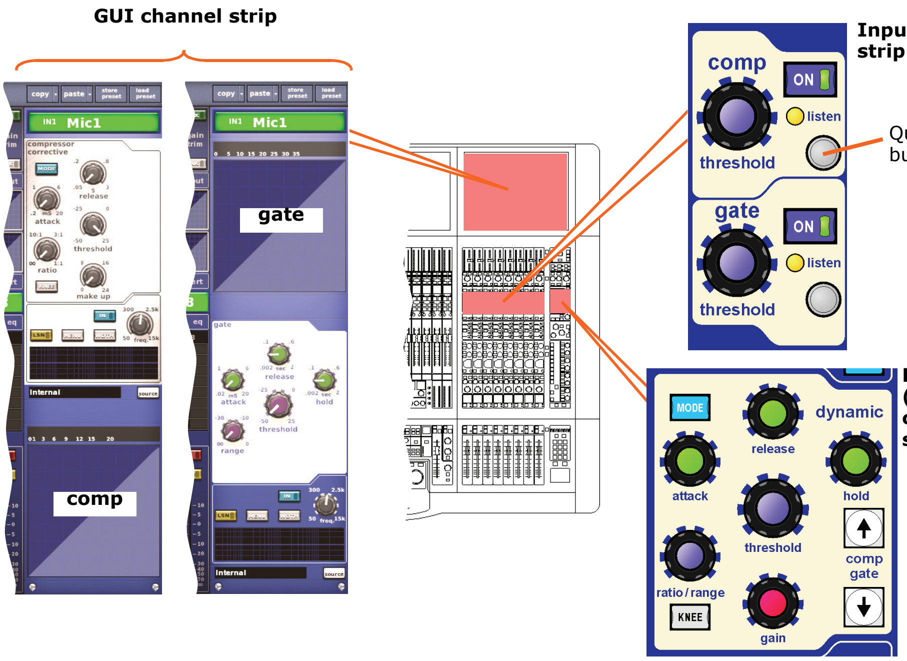
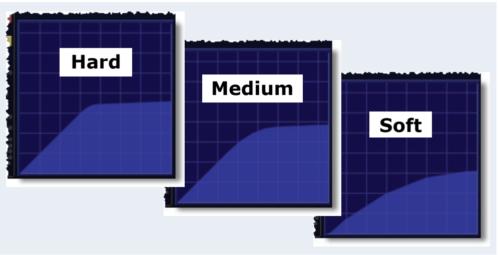

GUI channel strip
Mic1
gate
comp
Input fast strip
comp
ON
listen
threshold
Quick access button
gate
ON
listen
threshold
D zone (input channel strip)
MODE
dynamic
attack
release
hold
threshold
comp
gate
ratio/range
KNEE
gain

Figure 12: Compressor and gate sections of the input bays

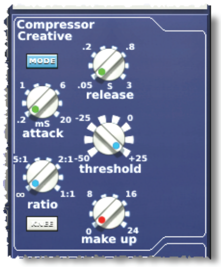
>> To set up a compressor/limiter

1. In the desired input fast strip, press **ON** in the **comp** section to switch the compressor in.
2. Do one of the following to select the channel and assign the compressor detail area to the GUI channel strip:
   - In the **comp** section of the desired input fast strip, press the quick access button.
   - In the D zone of the input channel strip, press the up arrow (**comp**) button. The button will illuminate to show that the compressor is selected.
3. In the D-zone, operate the **attack, ratio/range** (ratio), **release, threshold** and **gain** controls to apply processing. You can set up a limiter by using a high threshold and a steep ratio (greater than 5:1).

   The **hold** control knob has no affect as it is only used for the gate.
4. Press **KNEE** to audition the different algorithms (hard knee, medium knee and soft knee as shown right).


Hard
Medium
Soft

5. Press **MODE** to try the different compressor types (**Corrective, Adaptive, Creative** and **Vintage**). For example, **Creative** shown right.



>> To set up a gate

1. In the desired input fast strip, press **ON** in the **gate** section to switch the gate in.
2. Do one of the following to select the channel and assign the gate detail area to the GUI channel strip:
    - In the **gate** section of the desired input fast strip, press the quick access button.
    - In the D zone of the input channel strip, press the down arrow (**gate**) button. The button will illuminate to show that the gate is selected.
3. In the D-zone, operate the **attack, ratio/range** (range), **release, threshold** and **hold** controls to apply processing.

    The **make up** control knob has no affect as it is only used for the compressor.

Output processing

All outputs — except for the returns — have a six-band PEQ with shelving modes on bands 1, 2 and 6, and have the option of using a GEQ (accessed via a **GEQ** button in GUI channel strip). The returns have a similar EQ to that of the inputs channels.

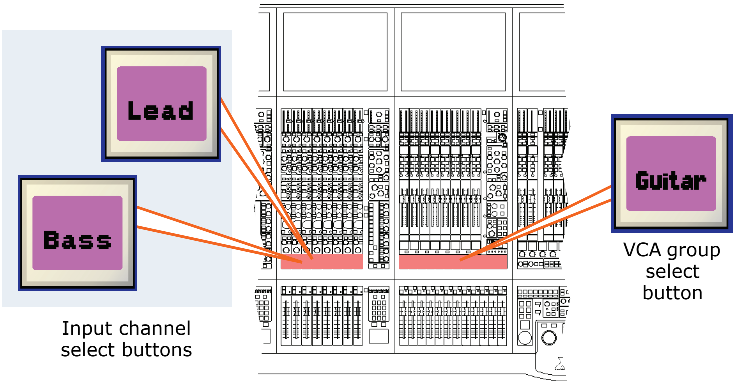
The outputs (except returns) have five compressor modes, which include all of the ones on the input channels, but with the addition of a shimmer mode. The returns have the same compressor modes as those of the input channels.

Using VCA/POP groups

VCA/POP groups allow simultaneous control over a number of channels. Being instantly recognisable, they provide a quick method of bringing particular channels to the control surface and save you having to remember their name/number.

You can choose channel group associations and also configure the colour and legend of each group's LCD select button, which is used for group member assignment and recall.

Any group can have any combination of channels (input/output) assigned to them, although in normal practice it is more likely that they will only have one or the other. Only input channel group members are unfolded to the surface (input bays). VCA groups include fader, solo and mute control, whereas POP groups merely bring a group of input channels to a desired area of the control surface for viewing or adjustment.

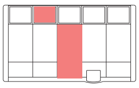


>> To assign channels to a VCA/POP group

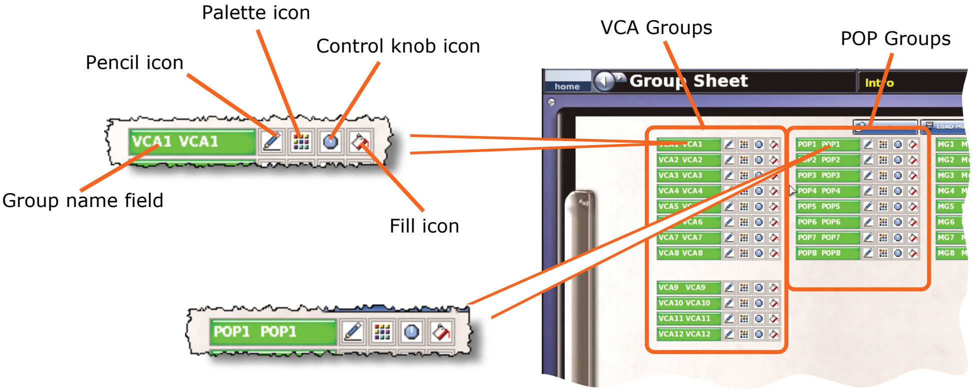
1. In the mix bay, press and hold down the desired group's LCD select button. For example, a VCA group named "Guitar". The button will start flashing when you are in group member selection mode and the inputs will jump to programme mode.
2. While still holding down the group's LCD select button, press the LCD select buttons of the channels that you want as group members. For example, "Bass" and "Lead". If necessary scroll to a new channel bank. A bank LED in the **input select** section (see Table 1 "Description of the navigational controls" on page 20) will flash if its bank contains a channel that is a member of the current group, but is not currently at the control surface.
3. Release the group's LCD select button. The group now contains the input channel members you have just chosen and the group will be selected.
4. Press the group's LCD select button again to exit the group.

*To quickly see which channels are in a particular VCA group, press its **SOLO** button on/off. Monitor this action on the dashboard screen (master bay GUI). Only the **SOLO** buttons of channels that are group members will be affected.*

Configuring VCA/POP groups



The default name and associated colour of a group, as shown on its LCD select button and on the GUI, can be configured to suit your own preference. You can also globally change the colour of a group's members to match its own colour. Configuration is done via the **Group Sheet** screen (shown below).



Note: *Clicking the control knob icon opens the* ***VCA Groups*** *screen (a submenu of the* ***Control Groups*** *option), which provides group management control.*

>> To access the Group Sheet screen

Do one of the following:

- At the GUI, choose **home** ▸ ***Control Groups*** ▸ ***Group Sheet.***
- In the primary navigation zone, press the **vca / assignable controls** screen access button.

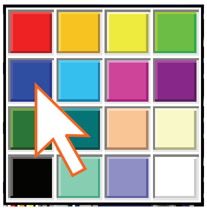
>> To set up the name of a VCA/POP group

Do one of the following:

- **Choose from a list of pre-configured names** Click the pencil icon of the group. Then, choose the name from the drop-down list. For example, choose "E Gtr".
- **Type in a new name** Click within the name field of the group and then follow "To enter/edit text via the keyboard" on page 18.

>> To set up the colour of a VCA/POP group

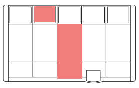
1. Click the palette icon of the group.
2. In the palette (shown right), click the colour you want. For example, choose blue.



>> To change the colour of all of a group's members to match that of its VCA/POP group

Click the fill icon of the group. For example, if the colour of the VCA/POP is blue all of its group members will now be blue.

Setting up a mix



XL8 has 32 configurable mix buses, each of which can be aux mixes, subgroups and mix minus. The aux mixes can also be set up as stereo pairs or mono. 16 matrix outputs can also be accessed directly from input channels via level controls, which gives the XL8 the ability to provide 48 discrete mixes, plus left, right and mono. To keep the control surface manageable, access to these mixes is confined to two rows of control knobs across the input fast zone (**mixes** section of the input fast strips), which can be scrolled up and down on a 'virtual' surface.

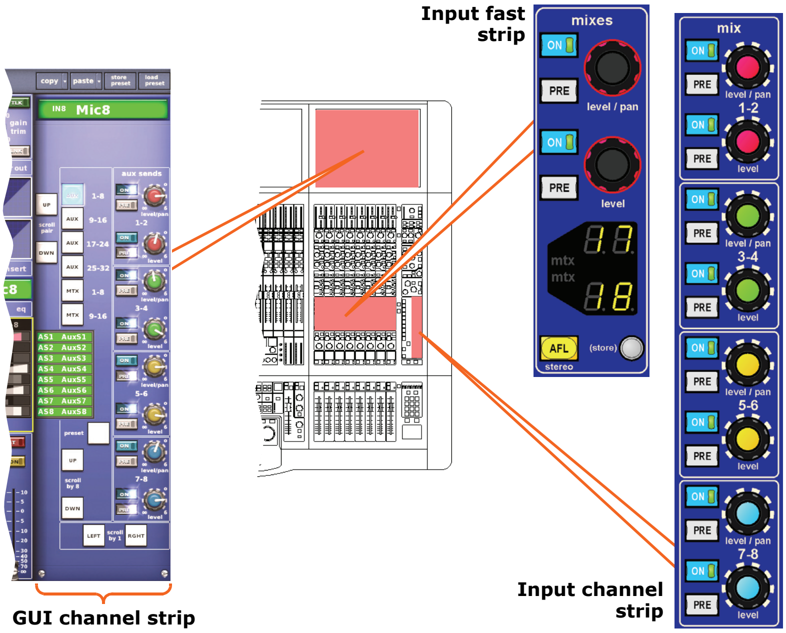
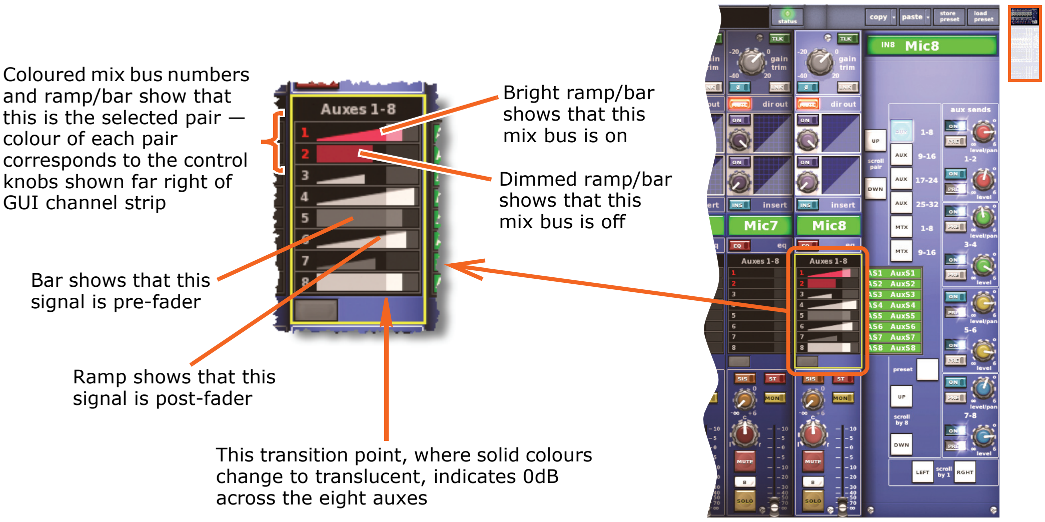

Input fast strip
mixes
ON
PRE
level / pan
level
mtx
mtx
AFL
(store)
stereo
mix
level / pan
1-2
3-4
5-6
7-8
Mic8
aux sends
AS1 AuxS1
AS2 AuxS2
AS3 AuxS3
AS4 AuxS4
AS5 AuxS5
AS6 AuxS6
AS7 AuxS7
AS8 AuxS8
GUI channel strip
Input channel strip

Figure 13: Mix sections in the input bays

Similarly to the inputs, outputs and groups, identification of mixes is by colour coding. The **mix** control knobs in the **mixes** section (input fast strips) and the **matrix** section (mix bay channel strip) change colour to match the currently selected mix pair. Similarly, on the GUI, the bank of mix buses in each input fast strip (see Figure 14 below) are colour matched, but also show mix bus status information.


Auxes 1-8
1
2
3
4
5
6
7
8
Mic7
Mic8

Coloured mix bus numbers and ramp/bar show that this is the selected pair — colour of each pair corresponds to the control knobs shown far right of GUI channel strip

Bright ramp/bar shows that this mix bus is on

Dimmed ramp/bar shows that this mix bus is off

Bar shows that this signal is pre-fader

Ramp shows that this signal is post-fader

This transition point, where solid colours change to translucent, indicates 0dB across the eight auxes

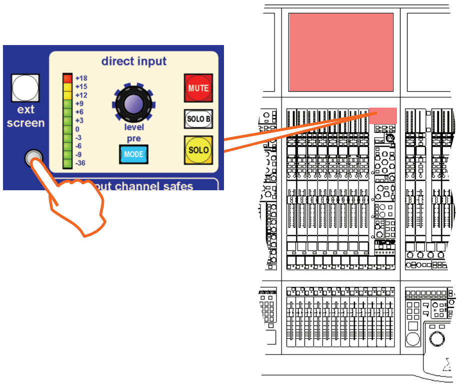
Figure 14: Typical mix section in a GUI input fast strip

Any pair of 48 mix buses can be locked onto the control surface of the input bays on an individual channel-by-channel basis, so that the two most crucial auxes for each channel (most pertinent effects auxes, main artistes' foldback, etc.) can be available at all times. For more information, see "Programming the mix preset" on page 43.

>> To select the mix bus mode

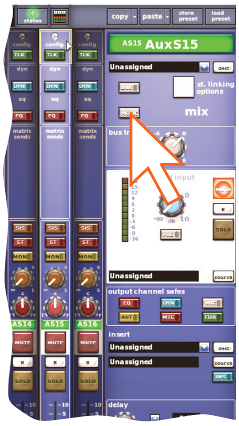
1 In the mix bay, select the aux you want. If necessary, navigate it to the control surface first (see "To navigate to a pair of mix buses" on page 25).

2 In the mix bay, press the quick access button that is adjacent to the **direct input** section of the output channel strip. This assigns the configuration detail area to the GUI channel strip, which contains the bus **MODE** button.



3 In the GUI channel strip, click **MODE** repeatedly to cycle through the mix modes (**mix**, **group** and **mix minus**) to choose the one you want. The currently selected mix mode is displayed in text to the right of the **MODE** button.

Group mode is fader only with no pre-fader. In mix minus mode all buses are initially routed — you have to switch a bus routing switch on to take it out of the mix. For information about stereo mix mode, see "Linking" on page 42.



>> To set up a mono aux mix

1 Making sure that the mix bus is not linked, select the bus mode as **mix** (see "To select the mix bus mode" above).

2 In the **mixes** section of the desired input channel (see Figure 13 "Mix sections in the input bays" on page 40), press the **(store)** quick access button. This selects the channel and assigns the mixes detail area to the GUI channel strip.

If necessary navigate the channel to the control surface first (see "How to navigate" on page 25).

3 Do the following:

a Press **PRE** to select pre-fader (on) or post-fader (off). Button status is only available on the GUI (see Figure 14 on page 40).

b Press **ON** to route the aux mix from input to aux output.

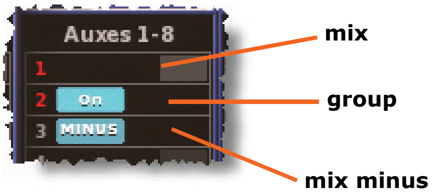
c Adjust the level control knob to change the signal level.

Selecting the type of mix

In addition to the mono, group and mix minus types of mix, you can also have a stereo aux mix. This is set up in the same way as for a mono aux mix, but the channels must be linked first. For information on selecting and setting up mixes, see "Setting up a mix" on page 40

How the different mixes are shown on the GUI

The input bay GUI screens indicate at a glance which type of mix is in operation. The diagram right shows an example of each mix type (with no levels set). Aux 1 has "mix" selected, aux 2 has "group" selected and aux 3 is selected as "mix minus".


Auxes 1-8
1
2 On
3 MINUS
mix
group
mix minus

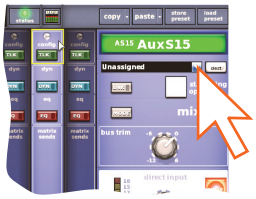
Mix bus routing

You can route an aux or matrix (or even master output) to an effect or output. This is a GUI-only operation, which is done via the GUI channel strip or **Patching** screen (see Chapter 7 "Patching").

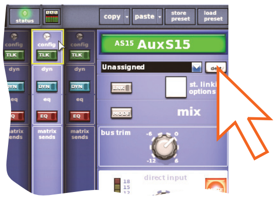
>> To route an aux or matrix to an effect or output

Select the mix bus and ensure its configuration detail area is assigned to the GUI channel strip. Then, do one of the following:

- In the GUI channel strip, open the drop-down list (shown right) and select the required mix bus destination.


status
copy
paste
store preset
load preset
AS15 AuxS15
Unassigned
dest
bus trim
direct input

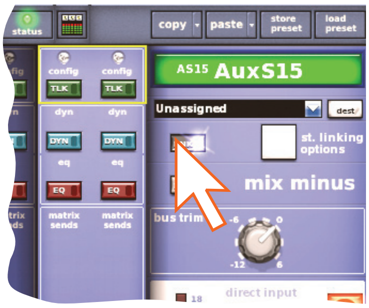
- In the GUI channel strip, click **dest** (shown right). This will open the **Patching** screen and the appropriate tab. Carry out patching as required.


status
copy
paste
store preset
load preset
AS15 AuxS15
Unassigned
st. linking options
mix
bus trim
direct input

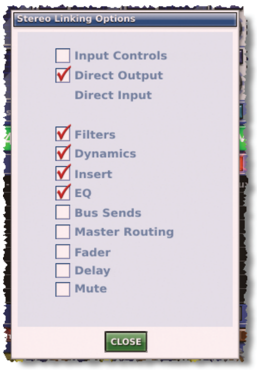
- Open the **Patching** screen via the GUI menu. Carry out patching as required.

Linking

You can link two mixes together, which is a GUI only feature. Pairs can only be created from adjacent mix buses of the same colour. To link a pair of mix buses, click the **LINK** button in the configuration detail area of either mix bus. For example, click **LINK** of aux 15 to link it to aux 16 (shown right).


status
copy
paste
store preset
load preset
config
TLK
dyn
DYN
eq
EQ
matrix sends
AS15 AuxS15
Unassigned
dest
st. linking options
mix minus
bus trim
direct input

The linked parameters default to the user-configurable global default link settings, which are set via the GUI menu (choose **home** ▸ ***Preferences*** ▸ ***Linking***). However, you can override these default link settings for the pair via the **Stereo Linking Options** window (shown right), which is opened by clicking the **st. linking options** button (GUI channel strip).

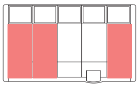

Stereo Linking Options

☐ Input Controls
☑ Direct Output
Direct Input

☑ Filters
☑ Dynamics
☑ Insert
☑ EQ
☐ Bus Sends
☐ Master Routing
☐ Fader
☐ Delay
☐ Mute

In stereo mix mode the top control knob becomes pan adjust and the bottom one adjusts level. When creating a stereo mix, you can use either the odd or even output to link the two channels, but the mode of the odd channel is used on both.

Programming the mix preset



You can 'lock' the most relevant aux/matrix sends to each channel on a scene-by-scene basis, which can then be instantly recalled to the control surface. This means that you can have any two mix buses of your choice at any input channel. The mix buses are stored in a "mix preset", which is recalled using the **preset** button in the input channel strips. Programming of the mix preset is a simple process whereby individual mix buses can be added as desired.

>> To add a mix bus to the mix preset

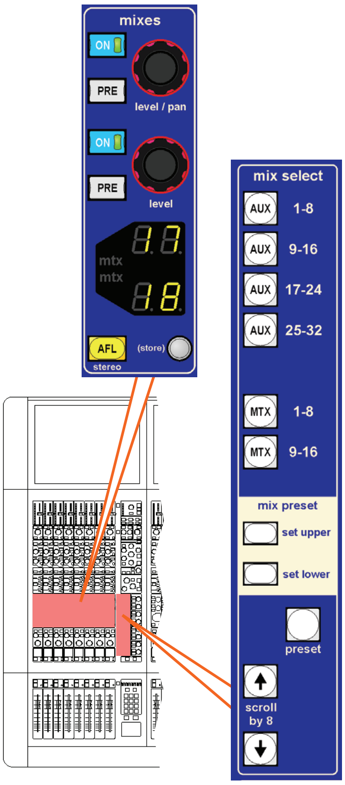
1 Navigate the desired mix bus pair to the input fast zone (see "How to navigate" on page 32).

2 In the **mix select** section of an input channel strip, press the **preset** button.

3 In the **mix preset** section, press and hold down the **set upper**/**set lower** button and press the **(store)** quick access button in the desired input fast strip(s) (see "To set up a mono aux mix" on page 41). The **set upper** button is used for the odd numbered mix bus and the **set lower** button for the even numbered one.

4 Release the **set upper**/**set lower** button.

If necessary repeat using the other **set upper**/**set lower** button to assign the other mix bus (odd or even) to desired input channels. For example, if you have just used the **set upper** button to assign aux 17 to desired input channels, press the **set lower** button to do the same with aux 18.



Repeat for different mix buses.

>> To activate the mix preset

Press **preset.** Any mix buses programmed in the preset are assigned to the input channels.

Fader flip

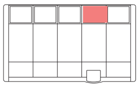
Fader flip is a GUI-only function that changes input fader control. By selecting fader flip, the input bay faders control the level of the selected aux send's contributions to the bus master, instead of controlling the input levels.

>> To switch fader flip on and off

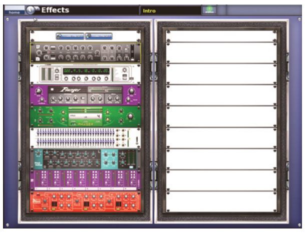
At a GUI screen, choose **home** ▸ ***Preferences*** ▸ ***General.*** Then, select the **Fader Flip** option (see "Changing the user interface preferences" on page 230).

Note: *When using fader flip to control the aux bus levels, always use the GUI to check the level. This is because the fader level markings have a maximum of +10dB, whereas the aux bus levels only go up to +6dB. On paired auxes, the faders only the control the level control knobs. The level/pan control knobs operate as normal for a stereo mix.*

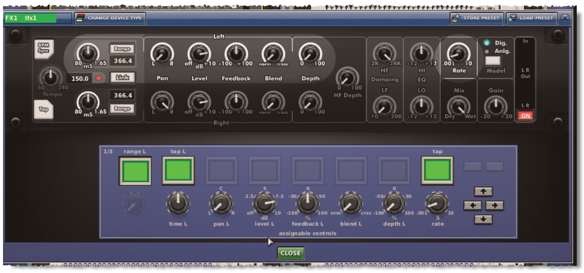
Setting up the effects rack



You can set up the effects rack (in the GUI menu's **Effects** screen) to contain any of the eight available effects listed in the **Change Device Type** window, in any of the 16 rack positions. The diagram right shows the rack populated with all available effects.

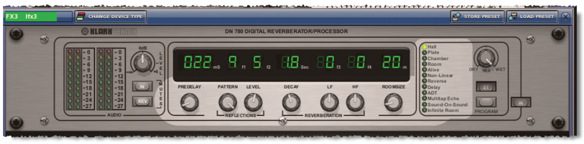


The **assignable controls** (shown in the **Delay** diagram) are common to all effects, and let you control effects parameters via the I zone (output bay's control surface).

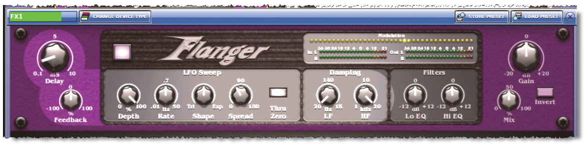


Delay — provides simple delay line-based effects. Delay times can be specified manually or you can use the 'tempo-tap' button. It has a three-mode delay algorithm:

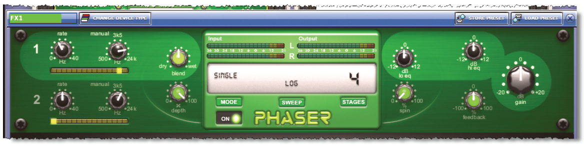
- **Single** — one delay tap (mono or stereo processing).
- **Dual** — two delay lines (stereo insert only).
- **Ping-pong** — two delay lines with cross feedback.



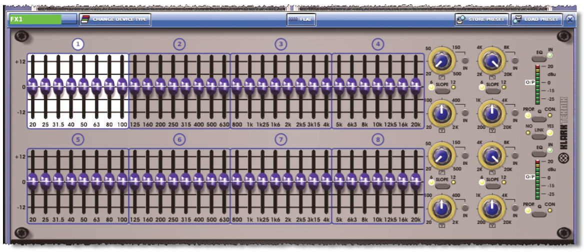
DN780 — is a reverberation device that emulates the Klark Teknik DN780 Digital Reverberator/ Processor unit and allows you to create unique acoustic environments of virtually any type.



Flanger — has one or, if configured as stereo, two tap delay lines. One tap is fixed and the other tap position is modulated to provide 'thru-zero' flanging or single tap modulation when 'thru-zero' is off.

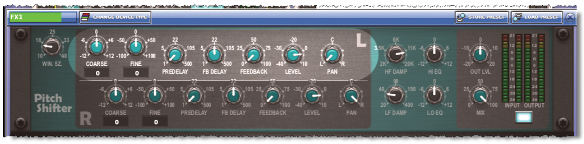


Phaser — has one, or if configured for dual operation, two stereo phasers connected in serial or parallel, according to mode setting.

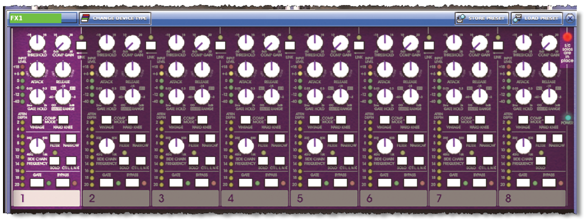


Stereo Graphic EQ — basically, two versions of the internal GEQ of the XL8, but with the addition of a **LINK** switch.

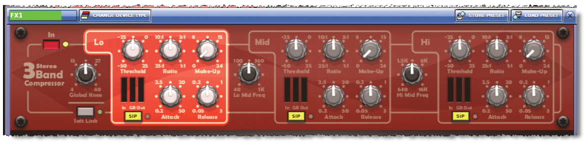
When both GEQs are linked together, their faders move a corresponding amount from the positions they were in when initially linked. So, although their adjustment will be equal, their dB values may be different. When unlinked, the GEQs are independent of each other.



Pitch Shifter — has two independent channels that can independently shift the pitch of signals up/down to correct poor pitching or generate harmonies. The pitch change can also be modulated as an effect.



SQ1 Dynamics — is an emulation of the Klark Teknik Square ONE Dynamics, which is an 8-channel analogue dynamics processor. Used for the precise manipulation of compression parameters, it also includes gating for creative and corrective applications, and channel linking for stereo/multi-channel operation.

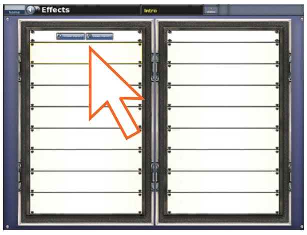


3 Band Compressor — is a minimum phase shift (analogue style) implementation that guarantees coherent band summing, even at the most extreme crossover point settings. Each band provides full control of its compressor's action, with partially adaptive time constants ensuring the most natural results from even the most variable sources.

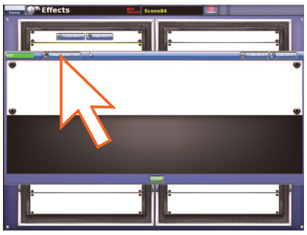
>> To add an effect to the effects rack

1 At the output GUI screen, choose **home** ▸ ***Rack Units*** ▸ ***Effects.*** Alternatively, press the **effects / graphics** screen access button in the primary navigation zone.

2 Choose the rack position and click within it.

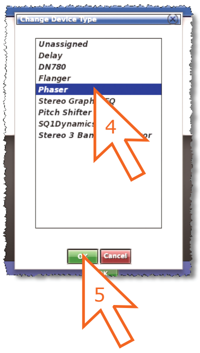


3 In the effect’s (empty) window, click **Change Device Type.**

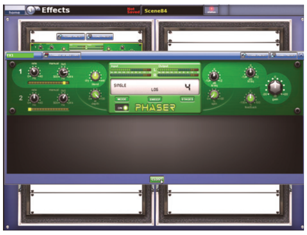

Effects
Scene84

4 In the **Change Device Type** window, choose the device type. For example, “Phaser”.

5 Click **OK.**

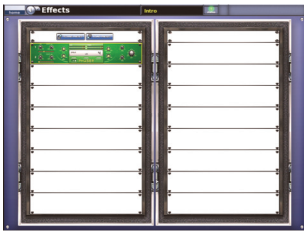

Change Device Type
Unassigned
Delay
DN780
Flanger
Phaser
Stereo Graph EQ
Pitch Shifter
SQ1Dynamics
Stereo 3 Ban or
4
OK
Cancel
5

6 Change the parameters of the new effect device as necessary. For example, adjust control knobs, press buttons etc. You can even change the effect’s name by editing its name field (upper-left corner of effect window). You can do this via the GUI or from the I zone using the output bay GUI (see Figure 2 “Main areas of control surface” on page 7).

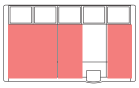

Effects
Scene84
PHASER

7 Click **CLOSE** to exit. The new effect will appear in the effects rack.

You can now patch the new effect, which will be on the **Effects** tabs of both the **From** and **To** sections of the **Patching** screen. For information on how to patch, see Chapter 5 "Patching" on page 23.


Effects
Intro

Simple routing to master stereo outputs

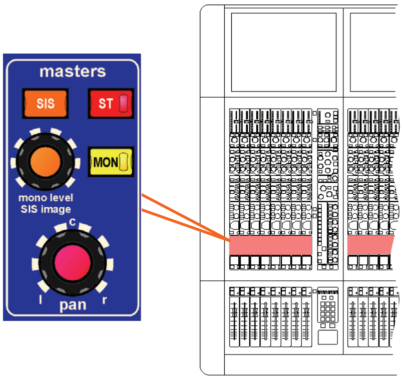


The following shows you how to obtain audio.

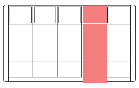
>> To obtain audio

1 Make sure nothing is muted and the master faders are up.

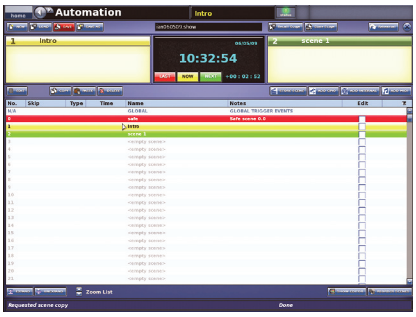
2 In the **masters** section of an input fast strip (or the output channel strip), press the **ST** (stereo) button. You should have audio.


masters
SIS
ST
MON
mono level
SIS image
c
l
pan
r

Automation



XL8 automation is managed from the **Automation** screen of the GUI menu, with support from the **automation** section of the control surface (output bay).



The **Automation** screen (a typical example is shown right) has the following functions and features:

- **Show management** — see "Managing the shows" on page 47.
- **Scene management** — see "Managing the scenes" on page 48.
- **Event management** — see "Additional control — managing events" on page 50.
- **Cue list** — shows the scenes and point scenes in performance order. The cue list includes information such as scene number, name, notes etc. You can expand and unexpand the point scenes and 'zoom' the list on/out. It also lets you reorder the scenes.
- **Scope** — the **Recall Scope** and **Store Scope** buttons open the scope screens, from which you can select the automated controls that you want to leave in/out of a scene when it is stored or recalled.
- **Rehearsal** — the **Rehearsal** button lets you carry out a rehearsal, which will 'skip' (leave out) any scenes that you choose.

***Note:** With no show loaded, the **Automation** screen will be blank.*

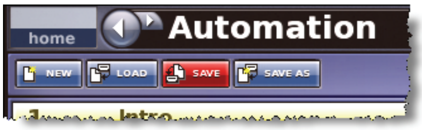
>> To open the Automation screen

Do one of the following:

- At the GUI, choose **home ▸ *Automation* ▸ *Automation.***
- In the primary navigation zone, press the **automation / filing** screen access button.

Managing the shows

The four buttons (**NEW**, **LOAD**, **SAVE** and **SAVE AS**) towards the top of **Automation** screen let you create a new show, load an existing show, update the current show or create a new show using the current settings.



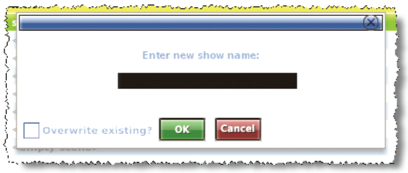
Important:
We recommend that you save your show settings regularly (see "Saving a show versus storing a scene" on page 13). The XL8 will indicate that there are show settings to be saved by changing the background colour of the SAVE button to red (shown right).

The eye icon in the **Automation** screen (just under the **ADD MIDI** button) opens the **Show** window. This window contains a number of filter options, such as empty scenes, MIDI events etc., that you can choose to exclude from your show.

>> To create a new show

1 Click **NEW.**

2 At the **Enter new show name:** message window, type your chosen name for the new show.

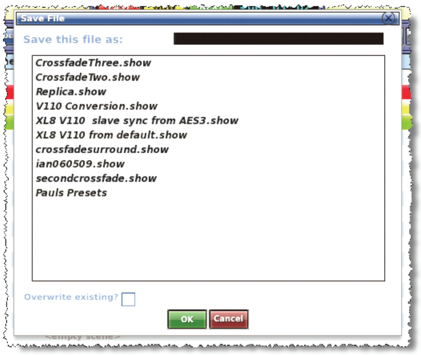

Enter new show name:
☐ Overwrite existing?
OK
Cancel

3 Click **OK.** You can now create and manage the scenes for your new show.

>> To save a show or create a new one from the current settings

Do one of the following:

- To update the current show with the latest settings, click **SAVE.**
- To create a new show using the current show settings, click **SAVE AS.** Then, in the **Save File** window (shown right), type in the name of the new show in the **Save this file as:** name field. Click **OK** to save the new show and close the window.
- To overwrite an existing show, click **SAVE AS.** Then, in the **Save File** window (shown right), click the show you want to overwrite to select it, click the **Overwrite existing?** box to select it this option and then click **OK.**

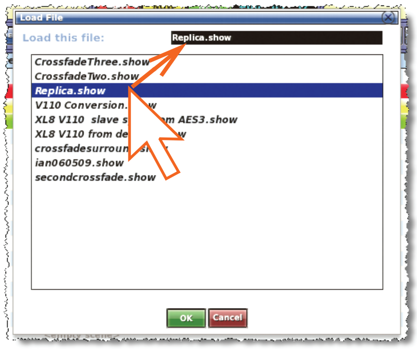

Save File
Save this file as:
CrossfadeThree.show
CrossfadeTwo.show
Replica.show
V110 Conversion.show
XL8 V110 slave sync from AES3.show
XL8 V110 from default.show
crossfadesurround.show
ian060509.show
secondcrossfade.show
Pauls Presets
Overwrite existing? ☐
OK
Cancel

>> To load a show

1 Click **LOAD.**

2 In the **Load File** window, click the show file you want to load (shown right). For example, "Replica.show". The file name will appear in the **Load this file:** name field.

The **Load File** window will contain a list of all the shows currently loaded. If the one you want is not there, import it (see "To load (import) a show file from a USB memory stick" on page 56).


Load this file: Replica.show
Load File
CrossfadeThree.show
CrossfadeTwo.show
Replica.show
ian060509.show
secondcrossfade.show
OK
Cancel

3 Click **OK.** The file will start loading and the window will close.

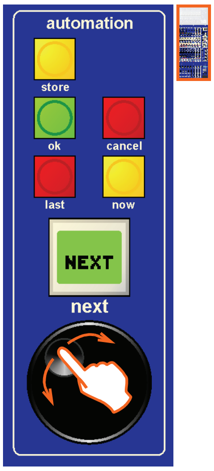
When the file has finished loading, its name will appear in the show file name field (to the right of the **SAVE AS** button).

Managing the scenes

Up to three scenes in the cue list will be highlighted to indicate your position in the show, as follows:

- 'last' (red) — the scene immediately before the most recently loaded one.
- 'now' (yellow) — the most recently loaded scene.
- 'next' (green) — the next available 'non-empty' scene.

The **automation** section in the output bay (see item J in Figure 2 “Main areas of control surface” on page 7) supports the **Automation** screen by providing controls for scene navigation, selection and management. The jogwheel is a unique automation controls, whereas the other buttons are replicated on the GUI.



>> To navigate the scenes/point scenes

Rotate the jogwheel. Individual scenes/point scenes are scrolled forwards/backwards, wrapping back to the beginning/end of the show. Scrolling includes empty scenes and doesn’t affect scene selection.

When using the jogwheel, the **next** LCD button changes to yellow and tracks the ‘now’ scene, providing useful feedback. This button only selects non-empty ‘now’ scenes.

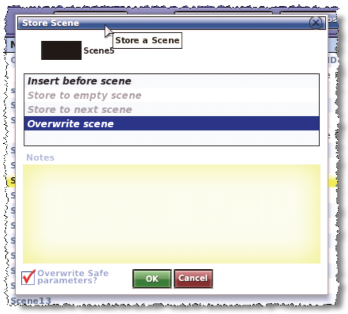
>> To recall a scene

Important:
When recalling a new scene, make sure monitor output levels are low, as the new scene’s settings may produce higher audio output levels than the one it is replacing. Also, recalling a scene clears any unsaved adjustments made to the previous scene.

Press **last**, **now** or **next** as desired.

>> To create a new scene using the current settings

1 Do one of the following:
   - In the automation section, press **store.**
   - In **Automation** screen on the GUI, click **STORE SCENE.**



2 In the **Store Scene** window, type in the scene name if necessary.

3 In the **Notes** panel, type in any scene notes as desired.

4 Do one of the following:
   - Click “Insert before scene” to put the new scene in between the one currently highlighted in yellow and the scene immediately before it.
   - Click “Store to empty scene” to put the new scene in the one currently highlighted in yellow, provided it is empty.
   - Click “Store to next scene” to put the new scene in the next one, provided it is empty.
   - Click “Overwrite scene” to overwrite the scene currently highlighted in yellow.

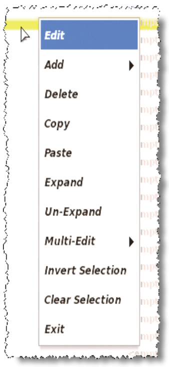
   The options are context-sensitive, so some may be greyed-out to show that they are unavailable. An **OK** button will appear at the bottom of the window when a valid store scene option has been selected.

5 Click **OK.**

Additional control — managing events

You can create crossfades and you can use the MIDI or GPIO functions of the XL8 to control the parameters of an external device (outgoing) — and conversely you can use an external device to control the XL8 (incoming). Also, by using the XL8's unique 'internal' event option, you can trigger events from within the showfile itself. All this is done by creating events in scenes/point scenes.

You can have any number and types of events in any scene/point scene; their parameters are set up and edited in an **Edit Event** window. Similarly to scenes/point scenes, you can skip events during rehearsals.



Events (and scenes/point scenes) have a right-click menu (shown right) that lets you to create, edit and copy events.

The following shows what some of the event symbols in the **Automation** screen mean: ● = currently selected event; ♫ = MIDI event; ⇆ = GPIO event; ⊕ = internal event/crossfade; ➡ = incoming event; and ⬅ = outgoing event.

>> To create an event

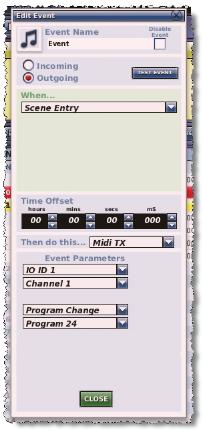
Select the scene in which you want to create the event, and then do one of the following:

- Click the **ADD GPIO**, **ADD INTERNAL, ADD MIDI** or **ADD CROSSFADE** button as necessary.
- From the right-click menu, choose ***Add* ▸ *Midi Event***, ***Add* ▸ *Internal Event*** or ***Add* ▸ *GPIO Event*** as necessary.

>> To edit an event

1. Open the **Edit Event** window by doing one of the following:
    - Right-click the event you want to edit and then choose ***Edit.***
    - Select the event you want to edit and then click **EDIT.**
2. In the **Edit Event** window, choose your options as necessary. For example, you can use a program change to trigger the event.
3. At the upper-right corner of the **Edit Event** window, click "X" to close it.

Changes in the **Edit Event** window are *live*, that is, they are immediately reflected in the show file. So you don't have to save the scene, as these are not audio parameters.

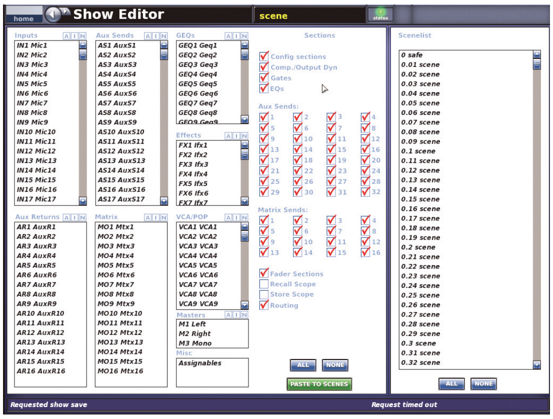


Event Name: Event
Disable Event ☐
○ Incoming
● Outgoing
When...: Scene Entry
Time Offset: hours 00 mins 00 secs 00 mS 000
Then do this...: Midi TX
Event Parameters
IO ID 1
Channel 1
Program Change
Program 24

>> To copy and paste an event

1. Right-click the event you want to copy, and then choose ***Copy.***
2. Do one of the following:
    - Select the scene in which you want to paste the copied event.
    - If the scene already contains an event(s), select an event after which you want to paste the copied event.
3. Right-click to open the menu, and then choose ***Paste.***

Show editor


home
Show Editor
scene
status
Inputs
Aux Sends
GEQs
Sections
Scenelist
Config sections
Comp./Output Dyn
Gates
EQs
Aux Sends:
Effects
Matrix Sends:
Fader Sections
Recall Scope
Store Scope
Routing
Aux Returns
Matrix
VCA/POP
Masters
M1 Left
M2 Right
M3 Mono
Misc
Assignables
ALL
NONE
PASTE TO SCENES
Requested show save
Request timed out

The show editor is a GUI-only function that allows you to very easily copy and paste settings through scenes. This is done via the **Show Editor** screen.

The **Scenelist** on the right of the screen is a cue list of the current show. Source lists (channels, GEQs, effects and groups) are to the left of the screen, from which you can copy the settings, and in the middle (**Sections**) are the areas you can copy. For details of the parameters per area, see Appendix O "Parameters Copied Through Scenes" on page 585.

>> To open the Show Editor screen

Do one of the following:

- From the GUI menu, choose **home ▸ *Automation* ▸ *Show Editor.***
- At the **Automation** screen, click **SHOW EDITOR.**

>> To copy and paste sections to a scene(s)

1. In the **Show Editor** screen, choose from the sources (far left) that contain the settings you want to copy from the lists. You can choose any combination.
2. Under the **Sections** heading, choose the sections that you want to copy. Ticked options will be copied. You can use the buttons underneath to help you, as follows:
   - Click **ALL** to select all of the sections.
   - Click **NONE** to deselect all selected sections.
3. In the **Scenelist**, click the scene(s) in which you want to paste the settings. You can use the buttons underneath the list to help you, as follows:
   - Click **ALL** to select all of the scenes in the list.
   - Click **NONE** to deselect all selected scenes.
4. Click **PASTE TO SCENES.**

Configuring the inputs and outputs

Similarly to the VCA/POP groups, you can change the name and colour of each of the inputs and outputs. This is done via the GUI at their respective sheet screens. For configuration details, see "Using VCA/POP groups" on page 38.

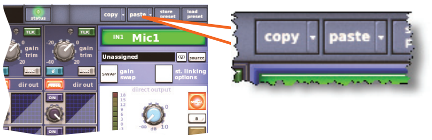
>> To open the Input/Output Sheet screen

Do one of the following:

- At the GUI, choose **home ▸ *Input Channels* ▸ *Input Sheet*** to open the **Input Sheet** screen, or choose **home ▸ *Mix & Outputs* ▸ *Output Sheet*** to open the **Output Sheet** screen.
- In the primary navigation zone, press the **inputs/outputs** screen access button once to open the **Input Sheet** screen or twice to open the **Output Sheet** screen.

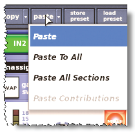
Using copy and paste

The **copy** and **paste** buttons (upper-right corner of GUI) let you copy the parameters of a channel's detail area (EQ, compressor, gate etc.) or all of its details areas, and paste them to another channel/all channels of a similar type. Both buttons have a right-click menu.


copy
paste
store preset
load preset
IN1
Mic1
Unassigned
gain trim
dir out
copy
paste

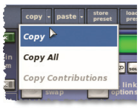
>> To copy a detail area to a channel/all channels

1. Navigate the detail area to its local channel strip (see "Selecting a detail area" on page 26).
2. Click **copy.**
3. Do one of the following:
    - To copy the detail area to another channel, select the channel and then click **paste.** As the copied parameters are still stored, you can paste to as many channels as you want.
    - To copy the detail area to all other channels, right-click **paste** to open its menu and then choose ***Paste To All.***


copy
paste
store preset
load preset
Paste
Paste To All
Paste All Sections
Paste Contributions

>> To copy all parameters to a channel/all channels

1. Select the channel from which you want to copy all parameters.
2. Right-click **copy** and then choose ***Copy All.***

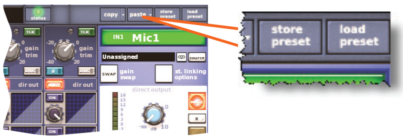

copy
paste
store preset
Copy
Copy All
Copy Contributions

3. Do one of the following:
    - To copy all the parameters to another channel, select the channel and then click **paste.**
    - To copy all the parameters to all other channels, right-click **paste** and then choose ***Paste To All.***

Copy and paste rules and restrictions

- You can only copy and paste similar functions. For example, you can't copy the input EQ from one channel to the output EQ of another, as they are different.
- You can only copy and paste across similar channel types. For example, you can't copy from an aux and paste to a matrix.
- Copying and pasting across inputs is restricted to the input bays only.
- Channel names are not copied.
- Compressor and gate side chain listen cannot be copied.

User library (presets)



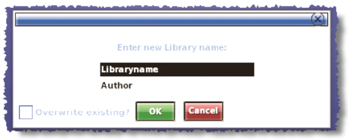
The XL8 has a user library where you can store settings, such as for the EQ or even the whole channel. For example, you may wish to store the EQ settings of a singer who may be called upon to perform during a future show. You can then easily recall these EQ settings to the appropriate channel when required.

The settings are stored as presets, which are saved in a library. The library files are managed via a **Preset Manager** screen in the GUI menu. This screen has **New**, **Load**, **SAVE** and **Save As** function buttons that let you create new libraries, load existing libraries, save the current library or give it a new name. You can also delete presets from the library.

Important:
Before you can save/load a preset, you need to create a new preset library or open an existing one.

>> To create a new preset library

1. From the GUI menu, choose **home ▸ *Preset Manager.***
2. In the **Preset Manager** screen, click **New.**
3. In the **Enter new Library name window**, type in your chosen name for the new preset library.
4. Click **OK.**



Enter new Library name:

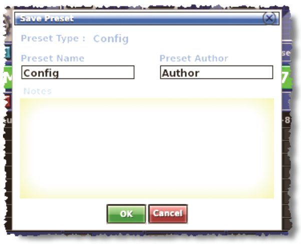
Libraryname

Author

☐ Overwrite existing?

>> To save a preset to the user library

1. Navigate your chosen settings to the channel strip.
2. At the GUI, click **store preset.**
3. In the **Save Preset** window, do the following:
    - In the **Preset Name** field, choose the preset.
    - In the **Preset Author** field, type in your name.
    - In the **Notes** field, type in any notes to help you identify the contents of the preset.
4. Click **OK.**



Save Preset

Preset Type : Config

Preset Name: Config

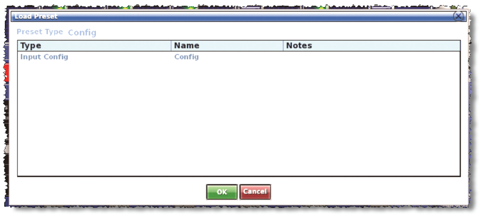
Preset Author: Author

Notes

If a message window opens containing the text "There is already an existing preset of that name Do you wish to overwrite ?", click **OK** to overwrite the existing preset. Otherwise, create a new one by clicking **Cancel**, choosing another preset name and then clicking **OK.**

>> To load a preset

1. Select the channel in which you want to load the preset.
2. At the GUI, click **load preset.**
3. In the **Load Preset** window, choose the preset you want to load.
4. Click **OK.**

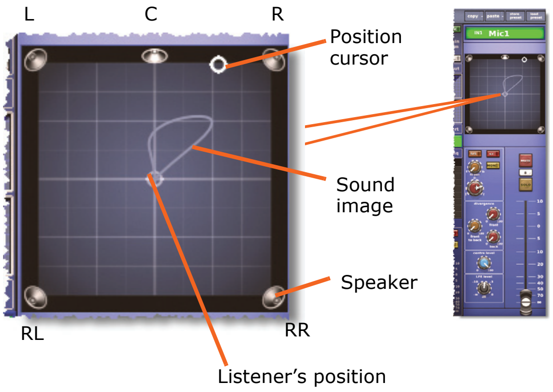


Load Preset

Preset Type Config

Type	Name	Notes
Input Config	Config	

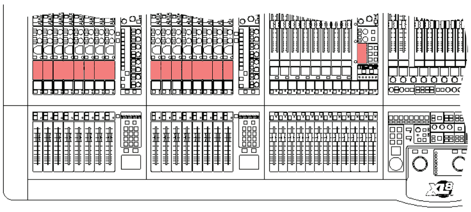
Surround panning

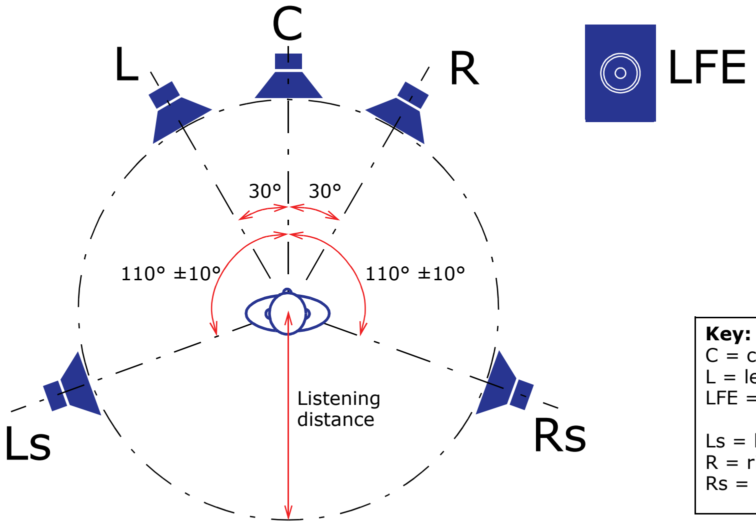


In addition to stereo and left-centre-right (LCR) panning, XL8 has three surround panning modes: quad; left, centre, right and surround (LCRS); and 5.1 surround. To help you visualise the surround panning envelope, the masters detail area of the GUI channel strip has a spatial diagram (shown right) that updates when you operate the panning controls.

The 5.1 panning mode uses six matrix channels, while quad mode uses four (left and right on both the front and surround). Although the LCRS mode uses five channels (front left and right, centre and surround left and right), both surround channels are the same. (In an LCRS surround panning arrangement, you can have a single surround speaker positioned directly behind the listener.)

The sound image is controlled via the **masters** sections of the input fast strips and mix channel strip (shown right). The figure below shows the recommended[1] 5.1 surround system configuration.





Key:
C = centre
L = left
LFE = low frequency effects (usually a subwoofer)
Ls = left surround
R = right
Rs = right surround

Figure 15: 5.1 surround panning loudspeaker arrangement

In surround mode, the **SIS** button routes the channel to the surround buses in much the same way that the **ST** button routes to the master buses. Surround panning mode is selected via the **Surround Mode** options of the **Preferences** screen (choose **home ▸ *Preferences* ▸ *General***).

---

[1] Reference - ITU-R BS.775.1, 1994. *Multichannel stereophonic sound system with and without accompanying picture.* International Telecommunications Union.

Two-man operation

The XL8 Control Centre can be operated by two people simultaneously. To do this one or two of the input bays are designated as area B. Initially, all input bays are area A, but after they have been designated as area B, both areas operate independently of each other.

This feature can also be used by a single operator if they require somewhere to store important channels. In this case, area B can be used in the same way a 'channel 25' would be used on an analogue console.

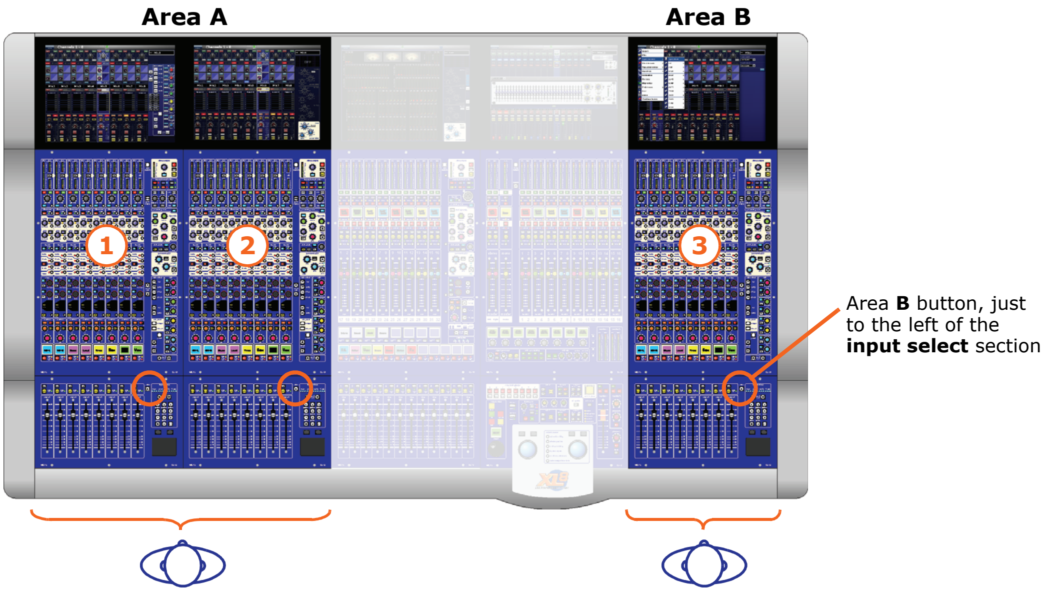
During two-man operation the mix and output bays are common to both areas. Also, you can have the same channel selected simultaneously in both areas (A and B).

VCA/POP groups can be pre-selected to populate area A or B, and a single group of inputs can have members in both areas of the control surface. An operator can then recall them to their own area to work on.

Note: *When operating in area B, remember to select the B option as necessary, particularly in the monitor section. Also note that solo B (also for talkback) is totally independent of area B, which is used for navigation only.*

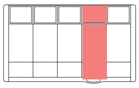
>> To set up the XL8 for two-man operation

Press the **B** button (see diagram below) in the input bay(s) that you want to operate as area B. The following diagram shows a typical configuration for area A and B operation, where input bays 1 and 2 are area A and input bay 3 is area B.



Area **B** button, just to the left of the **input select** section

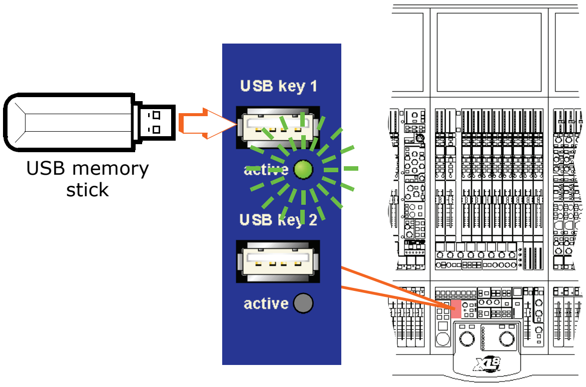
Saving your show files to a USB memory stick



When you are satisfied that your show file is how you want it, we recommend that you save it to a removable storage device (USB memory stick). This provides a valuable back up should the show file stored in the internal memory of the XL8 be lost, for example, due to inadvertent deletion. You can also load show files onto the XL8 from the same storage device.

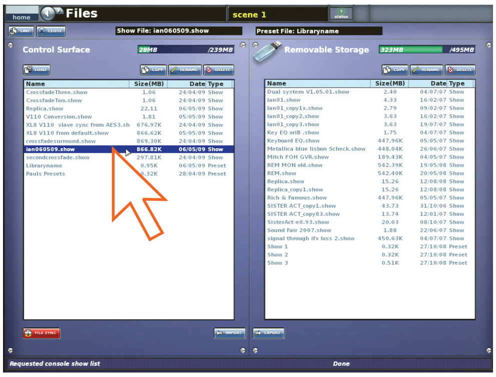
>> To save (export) a show file to a USB memory stick

1. If necessary close and save the show file you want to export. You can't export a show file that is open.
2. Insert the USB memory stick into the active USB socket, which is the one with the flashing **active** LED. For example, **USB key 1** (shown right).



3. Do one of the following:
   - At the GUI, choose **home ▸ *Files.***
   - In the primary navigation zone, press the **automation / filing** screen access button twice.
4. You may see an "Analysing..." message in the **Removable Storage** panel, which means that the Midas folder on the USB memory stick is being read. Wait for the message to clear. Then, in the **Control Surface** panel, click the show file you want to copy (shown right).

   Both lists show user libraries (presets) as well as show files. If there are neither of these file types on the USB memory stick, the **Removable Storage** panel will be empty.



Show File: ian060509.show

Preset File: Libraryname

Control Surface 28MB /239MB

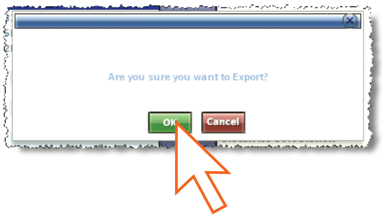
Name	Size(MB)	Date	Type
CrossfadeThree.show	1.06	24/04/09	Show
CrossfadeTwo.show	1.06	24/04/09	Show
Replica.show	22.11	06/05/09	Show
V110 Conversion.show	1.81	05/05/09	Show
XL8 V110 slave sync from AES3.sh	676.97K	24/04/09	Show
XL8 V110 from default.show	866.62K	05/05/09	Show
crossfadesurround.show	869.30K	24/04/09	Show
ian060509.show	866.82K	06/05/09	Show
secondcrossfade.show	297.81K	24/04/09	Show
Libraryname	0.95K	06/05/09	Preset
Pauls Presets	0.32K	28/04/09	Preset

Removable Storage 323MB /495MB

Name	Size(MB)	Date	Type
Dual system V1.05.01.show	2.40	04/07/07	Show
Ian01.show	4.33	16/02/07	Show
Ian01_copy1x.show	2.79	09/02/07	Show
Ian01_copy2.show	3.63	16/02/07	Show
Ian01_copy3.show	3.63	19/07/07	Show
Key EQ oriB .show	1.75	04/07/07	Show
Keyboard EQ.show	447.96K	05/05/07	Show
Metallica blue lisbon Scheck.show	448.04K	26/06/07	Show
Mitch FOH GVR.show	189.43K	04/05/07	Show
REM MON old.show	542.39K	19/05/08	Show
REM.show	542.40K	20/05/08	Show
Replica.show	15.26	12/08/08	Show
Replica_copy1.show	15.26	12/08/08	Show
Rich & Famous.show	447.96K	05/05/07	Show
SISTER ACT_copy1.show	43.73	31/10/06	Show
SISTER ACT_copy83.show	13.74	12/01/07	Show
SisterAct-e0.93.show	20.03	08/10/07	Show
Sound Fair 2007.show	1.88	22/06/07	Show
signal through ifx loss 2.show	450.63K	04/07/07	Show
Show 1	0.32K	27/10/08	Preset
Show 2	0.32K	27/10/08	Preset
Show 3	0.51K	27/10/08	Preset

Requested console show list *Done*

5. Click **EXPORT.**
6. In the **Are You Sure you Want To Export?** message window, click **OK** (shown right). The file will start copying to the USB memory stick.



Are you sure you want to Export?

7. When your show file appears in the **Removable Storage** panel, it has finished copying to the USB memory stick. Remove the USB memory stick.

>> To load (import) a show file from a USB memory stick

The procedure is similar to the export procedure, as detailed in "To save (export) a show file to a USB memory stick" above, but select the file to be imported to the XL8 from the **Removable Storage** panel and then click **IMPORT**.

External AES50 synchronisation

If you want to connect AES50 audio between two Midas digital consoles the slave console must be set to external AES50 synchronisation, irrespective of the synchronisation source of the master console.

	Console 2 sync setting			
Console 1 sync setting	***Master***	***Word clock***	***AES3***	***External AES50 from console 1***
Master	Not valid	Not valid	Not valid	Valid connection
Word clock	Not valid	Not valid	Not valid	Valid connection
AES3	Not valid	Not valid	Not valid	Valid connection
External AES50 from console 2	Valid connection	Valid connection	Valid connection	Not valid

A valid connection can be a tie line between the stage routers or the secondary port (Bx/By) of a mic splitter that has its primary port (Ax/Ay) connected to the master console.

Make sure that the DL431 Mic Splitter is set to synchronise from the master console.

Security (locking mode)

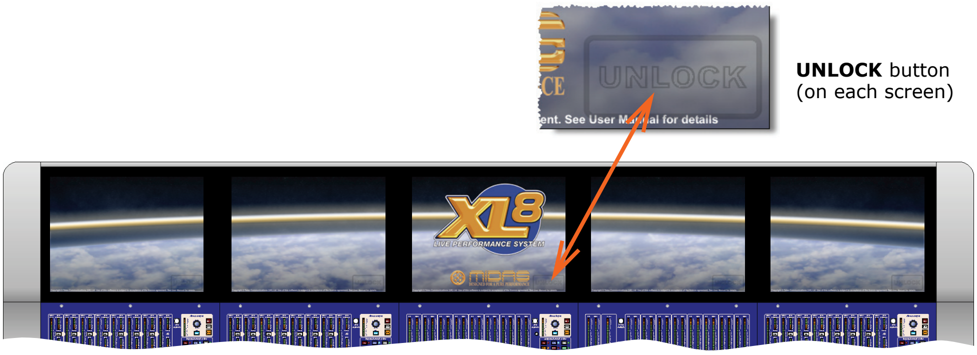
To preserve the current state of the XL8 Control Centre and to prevent unauthorised adjustment of its settings, you can lock it; this is a GUI-only function. When locked, none of the controls on the control surface will function and the XL8 Control Centre will be totally locked out.

>> To lock the XL8 Control Centre

At a GUI screen, choose **home** ▸ ***Lock.***

>> To unlock the XL8 Control Centre

At a GUI screen, click the **UNLOCK** button (shown below). The XL8 Control Centre will revert to the state it was in when it was previously locked.



UNLOCK button (on each screen)

Connecting And Setting Up The System

Chapter 9: Setting Up The System

This chapter shows you how to set up an XL8 Live Performance System to its default configuration.

Note: *If you want to set up the XL8 Live Performance System using a configuration other than the default, please contact Midas Technical Support for details.*

Initial set-up procedure

Initial system set-up basically comprises:

- **Unpacking and checking the equipment** — see "Unpacking the equipment" below.
- **Making up the racks** — see "Making up the racks" below.
- **Connecting up the equipment** — see "Wiring instructions" on page 62 and "XL8 system interconnections" on page 64.
- **Powering the equipment** — see "Powering the XL8 system" on page 66.
- **Initial patching:**
  - **Configure the type of snake** — see "Configuring the XL8 with the snake type" on page 30. **It is important to configure the XL8 with the correct type of snake connected in the system.**
  - **Setting up the I/O rack devices** — see "Configuring the devices" on page 29.
- **Configuring the DL4n1 units** — see "Setting up the ID of the DL4n1 units" on page 68.

Unpacking the equipment

After carefully unpacking the equipment, check it against the packing list shown in "System components (standard supply)" on page 3.

Save all packing materials, as they will prove useful if you need to transport the equipment later.

Inspect the equipment carefully for any sign of damage incurred during transportation. It has undergone stringent quality control inspection and tests prior to packing and was in perfect condition when it left the factory. However, if the equipment shows any signs of damage, notify the transportation company without delay. Only you, the consignee, may institute a claim against the carrier for damage during transportation.

Making up the racks

After you have unpacked the XL8 Live Performance System and made sure everything is there, make up the racks. In the default set up there are three stage rack units and one FOH rack unit, which should be set up as shown in "XL8 system interconnections" on page 64.

Although rack unit set-up is fairly straightforward, there are careful considerations to be addressed beforehand, which are outlined in the Owner's Manual (part number DOC02-XL8).

Wiring instructions

This section gives the system cabling details for the XL8-specific equipment and, although it is laid out in recommended order, this order is not critical.

When making the connections, please make sure they match those in "XL8 system interconnections" on page 64.

>> To connect both routers together

Important:
Without this connection system snake redundancy will be compromised.

Connect the routers via their **Ethernet** socket of the **control expansion** section on each router's rear panel (see "System interconnection panel" on page 253).

>> To connect the XL8 to the routers

Connect the 'snake' (optical or copper) from the X **snake** socket on the rear of the XL8 Control Centre to the appropriate **snake** socket on the X Router. Repeat for the Y Router using the Y socket on the XL8 Control Centre.

>> To connect the routers to the DSPs (Stage rack 2)

- In **AES50 audio - bank 0** on the X router, connect the 10 sockets to the **AES50 audio** X socket on the DSP units. Repeat for the Y router, using the equivalent Y sockets.
- In **Ethernet control** bank on the X router, connect the 10 sockets to the **Ethernet control** X socket on the DSP units. Repeat for the Y router, using the equivalent Y sockets.

>> To connect the routers to the Stage rack 1 units

- **Mic splitters:** In **AES50 audio - bank 1** on the X router, connect sockets 1 and 2 to the **AES50 audio - A** X sockets on the Mic Splitters. Repeat for Y router, using the mic splitters' Y sockets.
- **Line I/O units:** In **AES50 audio - bank 1** on the X router, connect sockets 5 and 6 to the **AES50 audio** X sockets on the line I/O units. Repeat for Y router, using the line I/O units' equivalent Y sockets.

>> To connect the routers to the Stage rack 3 units

- **Mic splitters:** In **AES50 audio - bank 1** on the X router, connect sockets 3 and 4 to the **AES50 audio - A** X sockets on the mic splitters. Repeat for the Y router, using the mic splitters' Y sockets.
- **Line I/O unit:** In **AES50 audio - bank 1** on the X router, connect socket 6 to the **AES50 audio** X socket on the line I/O unit. Repeat for the Y router, using the line I/O units' equivalent Y socket.

>> To connect the XL8 to the line I/O units (FOH rack)

Connect the **AES50 audio** X sockets on the rear of the XL8 Control Centre to the **AES50 audio** X socket on both of the line I/O units in the FOH rack. Repeat for the Y sockets.

>> To connect the XL8 to the RAPIDE

Connect one of the eight **ETHERNET** (EtherCon® XLR) sockets on the rear of the RAPIDE unit to the **Ethernet control 1** socket of the active network (X or Y) on the rear of the XL8 Control Centre (see "XL8 system interconnections" on page 64).

>> To daisy chain the DSP units

Important Note:
Do not connect a cable to like numbered sockets, that is, "0" to "0" or "1" to "1", as the DSPs will not work; socket numbers are printed to the right of each socket.

There are two default configurations available, depending on the lengths of the interconnecting DSP cables supplied, that is, 0.25 m cables or 0.5 m cables. Both options contain a long cable for connecting the top and bottom units, and the 0.25 m option has an additional long cable for connecting units AMU 2 and AMU 9.

A cable's length (cm) can be determined from a three-digit number contained within its part number (printed on a label attached to the cable). For example, in a part number of "14150-EZBB-050-0LC 060425TD" the "-050-" indicates a length of 50 cm.

Connect the DSPs together as shown in the following diagram, according to the cables supplied with your system. (In the diagram, the cables are coloured and the sockets numbered to help distinguish them.)

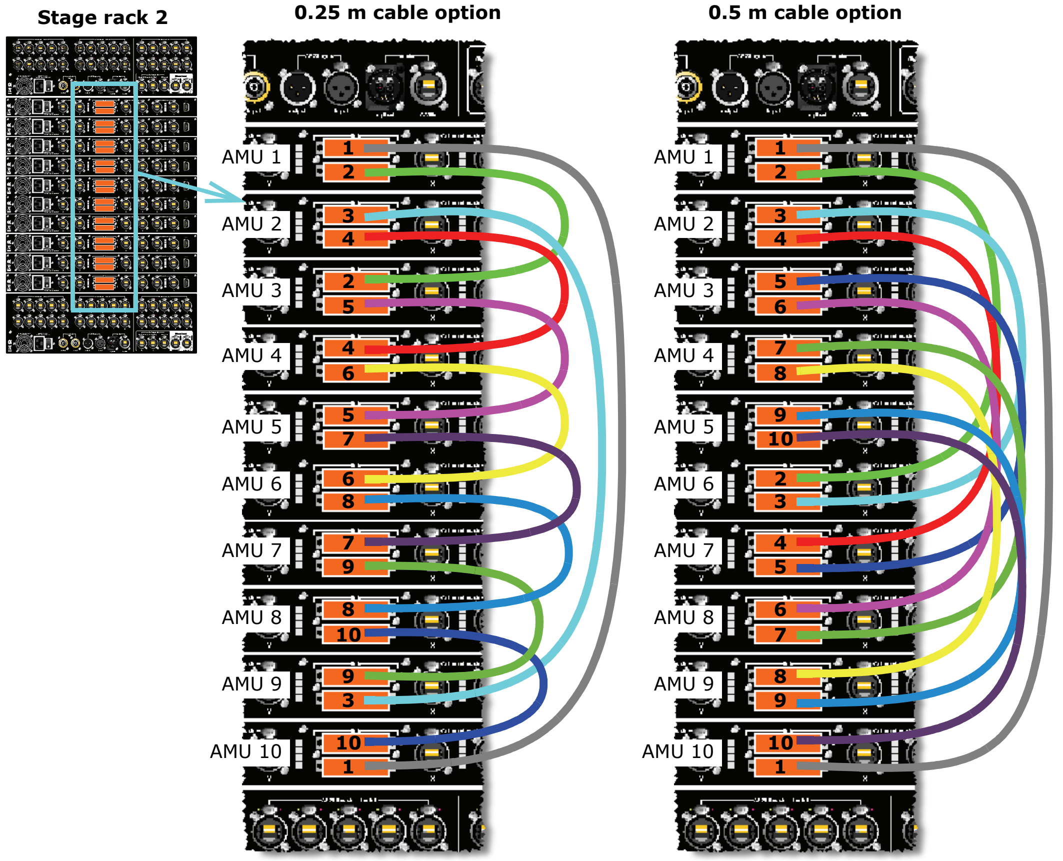
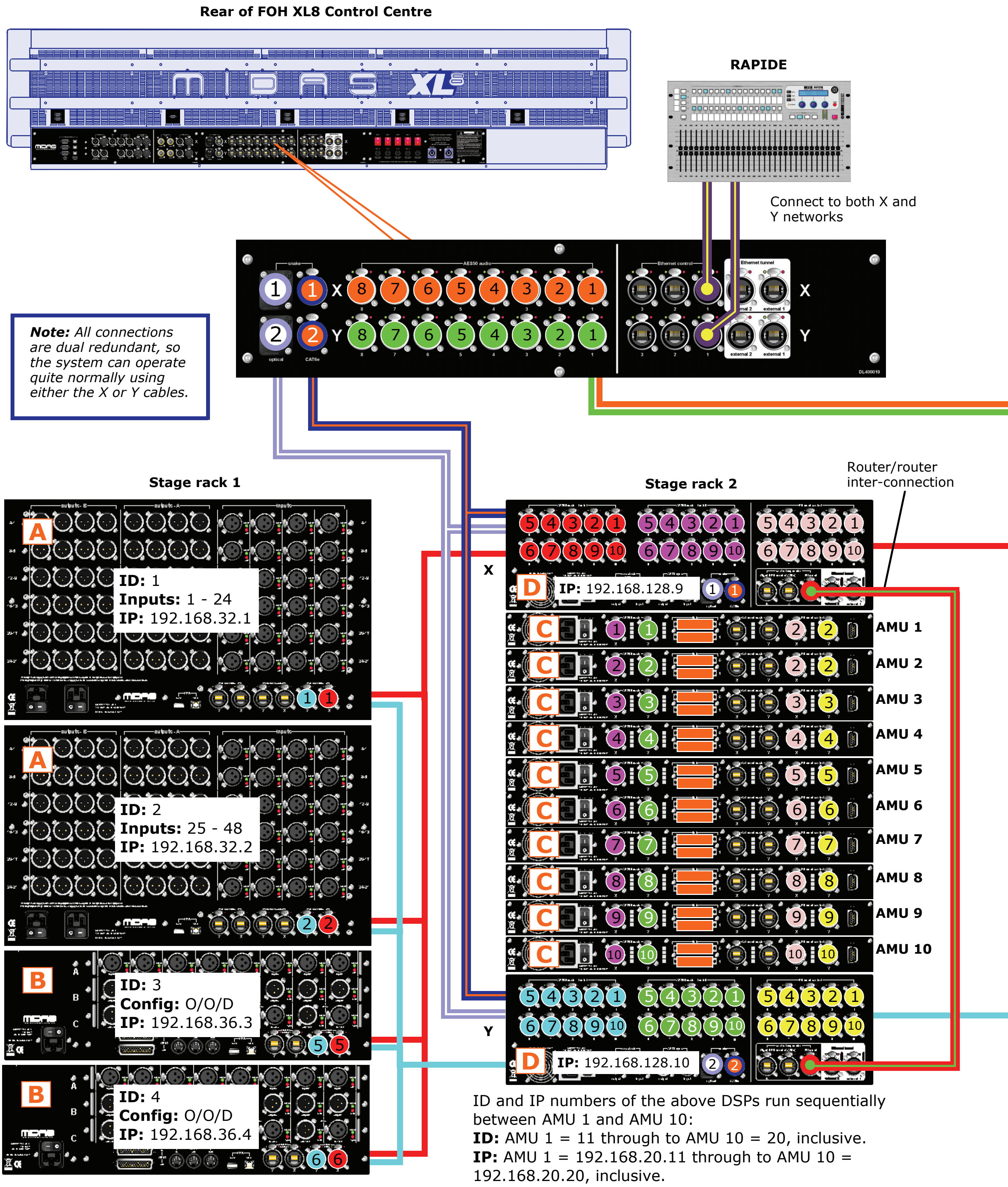

Stage rack 2
0.25 m cable option
AMU 1
1
2
AMU 2
3
4
AMU 3
2
5
AMU 4
4
6
AMU 5
5
7
AMU 6
6
8
AMU 7
7
9
AMU 8
8
10
AMU 9
9
3
AMU 10
10
1
0.5 m cable option
AMU 1
1
2
AMU 2
3
4
AMU 3
5
6
AMU 4
7
8
AMU 5
9
10
AMU 6
2
3
AMU 7
4
5
AMU 8
6
7
AMU 9
8
9
AMU 10
10
1

Figure 16: Stage rack 2 - DSP wiring options

XL8 system interconnections

This diagram shows the network interconnections for a typical FOH XL8 system.

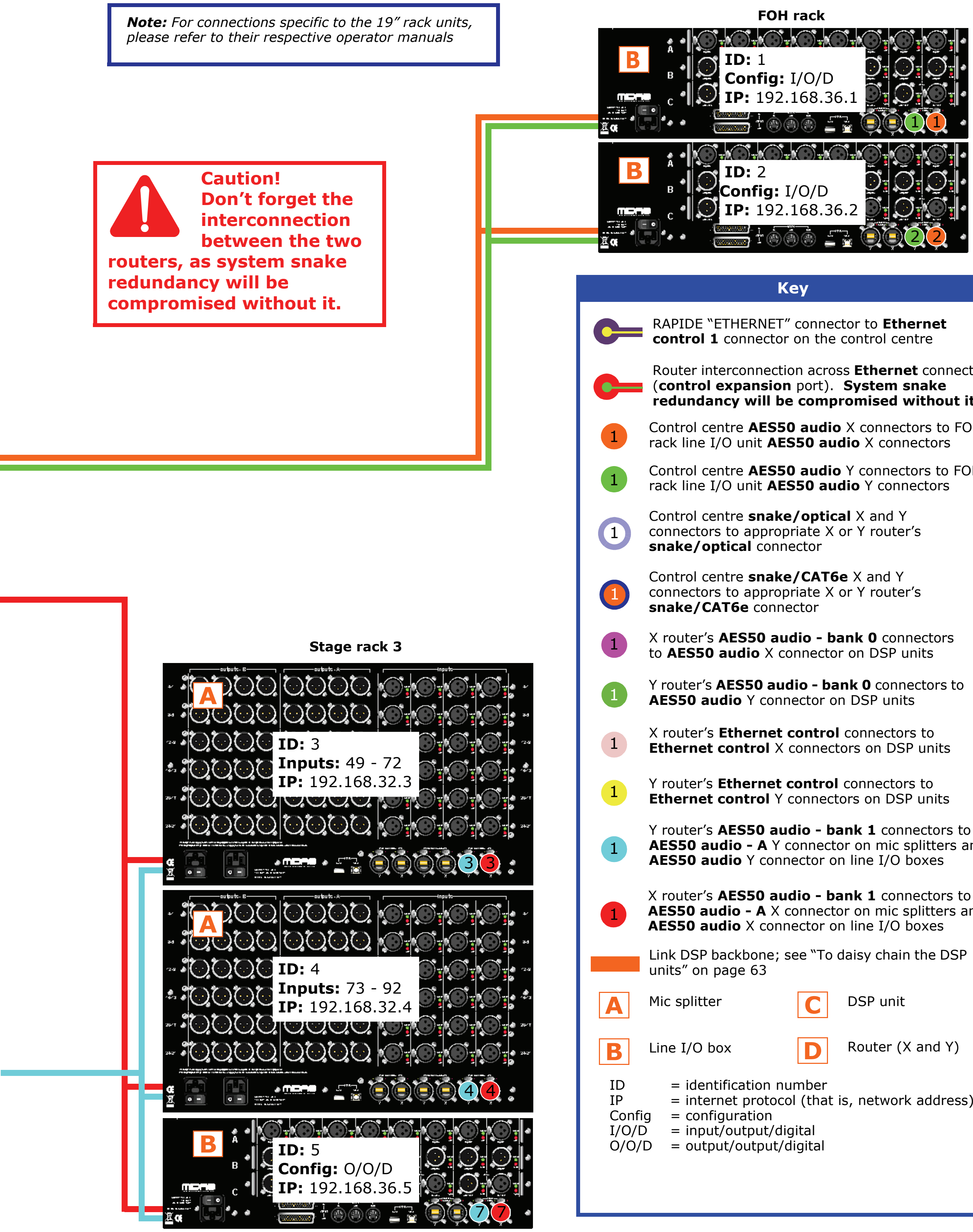

Rear of FOH XL8 Control Centre
RAPIDE
Connect to both X and Y networks
X
Y
Stage rack 1
Stage rack 2
Router/router inter-connection
A
ID: 1
Inputs: 1 - 24
IP: 192.168.32.1
A
ID: 2
Inputs: 25 - 48
IP: 192.168.32.2
B
ID: 3
Config: O/O/D
IP: 192.168.36.3
B
ID: 4
Config: O/O/D
IP: 192.168.36.4
D
IP: 192.168.128.9
C
AMU 1
AMU 2
AMU 3
AMU 4
AMU 5
AMU 6
AMU 7
AMU 8
AMU 9
AMU 10
D
IP: 192.168.128.10

Note: *All connections are dual redundant, so the system can operate quite normally using either the X or Y cables.*

ID and IP numbers of the above DSPs run sequentially between AMU 1 and AMU 10:
ID: AMU 1 = 11 through to AMU 10 = 20, inclusive.
IP: AMU 1 = 192.168.20.11 through to AMU 10 = 192.168.20.20, inclusive.

Note: *For connections specific to the 19" rack units, please refer to their respective operator manuals*

Caution! Don't forget the interconnection between the two routers, as system snake redundancy will be compromised without it.



Key

●	RAPIDE "ETHERNET" connector to **Ethernet control 1** connector on the control centre
●	Router interconnection across **Ethernet** connectors (**control expansion** port). **System snake redundancy will be compromised without it!**
1	Control centre **AES50 audio** X connectors to FOH rack line I/O unit **AES50 audio** X connectors
1	Control centre **AES50 audio** Y connectors to FOH rack line I/O unit **AES50 audio** Y connectors
1	Control centre **snake/optical** X and Y connectors to appropriate X or Y router's **snake/optical** connector
1	Control centre **snake/CAT6e** X and Y connectors to appropriate X or Y router's **snake/CAT6e** connector
1	X router's **AES50 audio - bank 0** connectors to **AES50 audio** X connector on DSP units
1	Y router's **AES50 audio - bank 0** connectors to **AES50 audio** Y connector on DSP units
1	X router's **Ethernet control** connectors to **Ethernet control** X connectors on DSP units
1	Y router's **Ethernet control** connectors to **Ethernet control** Y connectors on DSP units
1	Y router's **AES50 audio - bank 1** connectors to **AES50 audio - A** Y connector on mic splitters and **AES50 audio** Y connector on line I/O boxes
1	X router's **AES50 audio - bank 1** connectors to **AES50 audio - A** X connector on mic splitters and **AES50 audio** X connector on line I/O boxes
▬	Link DSP backbone; see "To daisy chain the DSP units" on page 63

A	Mic splitter	C	DSP unit
B	Line I/O box	D	Router (X and Y)

ID = identification number
IP = internet protocol (that is, network address)
Config = configuration
I/O/D = input/output/digital
O/O/D = output/output/digital

Powering the XL8 system

The following details the recommended power up and power down procedures for the XL8 system.

>> To power up the XL8 system

Important Note:
DO NOT switch on the speaker sub-system until after the start-up of the XL8 system has been completed.

After all XL8 system interconnections have been made (see Chapter 30 "Panel Connections"), start up the XL8 system:

1. Make sure that all of the XL8 system equipment is switched off, that is, the XL8 Control Centre, speaker sub-system, DL431 mic splitters, DL451 modular line I/O units, DL461 routers and DL471 DSP units.
2. Switch on the XL8 Control Centre (see "To switch on the XL8 Control Centre" on page 67).
3. On the XL8 Control Centre, move all of the monitor and master channel faders to the minimum position and mute all of the master channels. The master channels can be found in the mix and output fast zones (see "XL8 control surface" on page 7).
4. Switch on the DL431 Mic Splitters.
5. Switch on the DL451 Modular I/O units.
6. Switch on the DL471 DSP units.
7. Switch on the DL461 Routers.
8. After the **status** LEDs (top of each GUI screen on the XL8 Control Centre) turn green, switch on the speaker sub-system.
9. Switch on the audio source and start playing the audio.
10. On the XL8 Control Centre, check that the audio inputs are routed to the master channels. Then, unmute the master channels and gradually increase their faders, while listening to the sound levels from the speakers.

If there are no sounds at all from the speakers when the faders are at maximum, move the faders to below the 0dB level and check if the audio is muted somewhere along the input paths and also check that the individual speakers are switched on. If there is still no sound from the speakers, contact Midas Technical Support.

>> To power down the XL8 system

Important Note:
BEFORE switching off any of the XL8 system components, make sure to mute the audio from the speakers and switch off the speaker sub-system.

1. Mute the audio from the speakers and switch off the speaker sub-system.
2. Switch off the DL431 Mic Splitters.
3. Switch off the DL451 Modular I/O units.
4. Switch off the DL471 DSP units.
5. Switch off the DL461 Routers.
6. Switch off the XL8 Control Centre (see "To switch off the XL8 Control Centre" on page 68).

Switching the XL8 Control Centre on/off

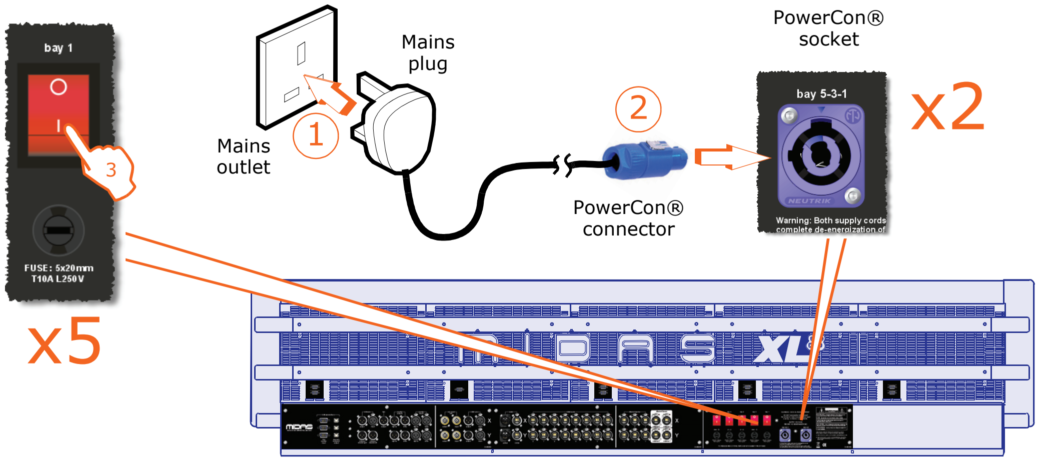
Carry out the following to switch the XL8 Control Centre on/off in a safe manner, observing all **WARNINGS** and **Cautions.**

>> To switch on the XL8 Control Centre

WARNING!
DO NOT **INSERT OR REMOVE A POWERCON® CONNECTOR INTO/FROM REAR OF CONTROL CENTRE WITH MAINS POWER AND ANY OF THE MAINS BAY SWITCHES ON. YOU *MUST* MAKE SURE ALL MAINS BAY SWITCHES ARE OFF AND MAINS IS SWITCHED OFF AT THE POWER OUTLET(S) FIRST.**

Caution!
Before switching on, check that all monitor loudspeaker power amplifiers are turned off or muted.

After connecting up the audio cables, carry out the following:


bay 1
O
I
3
FUSE: 5x20mm
T10A L250V
x5
Mains outlet
1
Mains plug
2
PowerCon® connector
PowerCon® socket
bay 5-3-1
NEUTRIK
Warning: Both supply cords
complete de-energization of
x2
XL8

Rear of XL8 Control Centre

1 Plug the two control centre's mains PowerCon® cables into the mains power outlets.

2 Insert the two mains PowerCon® connectors into the PowerCon® sockets on rear of control centre, observing the **WARNING!** above. Then, lock each one by twisting the PowerCon® connector about 90° (1/4 turn) clockwise; you should hear a click when it has locked in place. Check that both PowerCon® connectors are securely fitted.

3 Observing the **Caution!** above, switch on all five bay mains on/off switches, one after the other. **It is important that you don't switch on two or more switches simultaneously.**

4 The control centre will power up; the GUI will display the default screens and all the controls will be set to default. You are now ready to start using the XL8 control centre.

>> To switch off the XL8 Control Centre

1 Make sure you have saved any shows, scenes or settings you require (see “Saving your show files to a USB memory stick” on page 56).

2 At the GUI, choose **home ▸ *Preferences* ▸ *Shutdown System.***

3 At the **Shutdown ENTIRE system?** prompt, click **OK.** This initiates the shutdown down sequence.

During the shutdown sequence the GUI screens will shutdown and all of the LCD select buttons on the control surface will turn red. To inform you of the shutdown status, the LCD select buttons in the input bays and VCA/POP group sections will also display individual and contiguous text messages, respectively.

When the shutdown sequence has finished the LCD select buttons on the control surface will turn green, and the appropriate ones will also display text messages, accordingly.

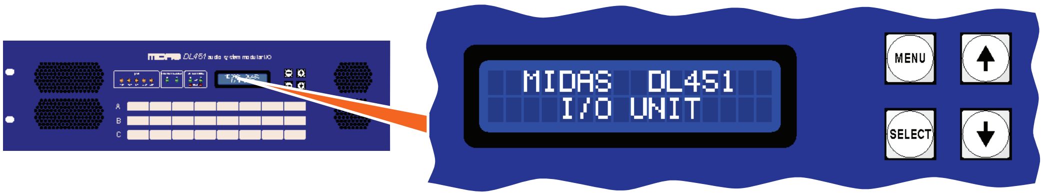
Important:
During the shutdown sequence, when the LCD select buttons on the control surface are red, do not switch off the mains power supply, and when they are green, it is OK to switch off the mains power supply.

4 Make sure that the shutdown sequence has finished, and then switch off the five bay mains on/off isolator switches (rear of control centre), one at a time.

5 Disconnect the two mains PowerCon® connectors from the PowerCon® sockets on rear of XL8 Control Centre. To unlock them, twist by about 90° (1/4 turn) anti-clockwise.

Setting up the ID of the DL4n1 units

After connecting up your XL8 network system, you will need to set up the ID of the DL431 Mic Splitter, DL451 Modular I/O and DL471 DSP units (if they don’t already have the ID you want). This is done via the control panel of the unit — the following diagram shows the control panel of a DL451 Modular I/O. Each unit’s ID number is shown on its default display.



To change the ID number there is no need to switch on the XL8 Control Centre, as the procedure can be carried out offline.

The unit ID set up procedure, which is basically the same for each type of unit, is as follows:

- Enter the main menu. (On the DL431 Mic Splitter and DL451 Modular I/O units press and hold down for approximately two seconds, and on the DL471 DSP unit press the down arrow.)
- Use the up/down arrow buttons to go the ID option and then press **SELECT.**
- Use the up/down arrow buttons to go to the ID number you want and then press **SELECT.**
- To exit the menu, pressing **MENU.**

For more information, refer to the operator manual for the particular unit.

Appendices

Appendix A: Troubleshooting

This chapter gives a brief troubleshooting guide to the XL8 Control Centre.

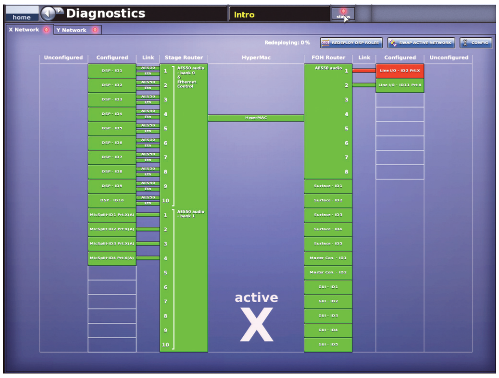
No audio

If you have set up the XL8 and followed all of the instructions for obtaining audio, but you are not hearing anything through the speakers, check the following:

- Make sure the appropriate **ST** buttons in the channel fast strips are on.
- Make sure the appropriate **ST** buttons in the **source a**/**b** panels (monitors section of the output bay) are on.
- Make sure nothing is muted.
- Make sure no faders are set to minimum.
- Check that the VCA group and master faders are at unity gain.
- Use solo at selected points in the signal path to try and pinpoint where the signal is being lost.
- Check the **Preferences** screen for correct signal routing by making sure channel sources/destinations are correctly assigned.

If you still don’t have any audio, contact Midas Technical Support.

Diagnostics


home
Diagnostics
Intro
status
X Network
Y Network
Redeploying: 0 %
REDEPLOY DSP ROLES
SWAP ACTIVE NETWORK
CONFIG
Unconfigured
Configured
Link
Stage Router
HyperMac
FOH Router
Link
Configured
Unconfigured
DSP - ID1
AES50
Eth
AES50 audio - bank 0 & Ethernet Control
HyperMAC
AES50 audio
Line I/O - ID2 Prt:X
Line I/O - ID11 Prt:X
active
X

You can view the **Diagnostics** screen (shown right) to get an overview of the current health and status of the system. The **Diagnostics** screen shows real-time connectivity of the system, the health of connected nodes and whether a device is configured or not.

The state of each item is indicated by its colour where:

- **Green** = healthy.
- **Amber** = error condition, but it is not currently contributing to the audio.
- **Red** = error condition. For example, in the screen shown above, one of the I/O devices in the FOH rack has an error (note how the **status**, **X Network** and **Y Network** LEDs are also red).

Each DSP has two connections per unit to show a loss of AES synchronisation and cable failure.

The **status** LED at the top of the screen, which is constantly displayed while the XL8 is switched on, is linked to the status of individual items on the **Diagnostics** screen. You can click on it to see what is causing the error. The X and Y network tabs have similar LEDs that show the status of their respective networks.

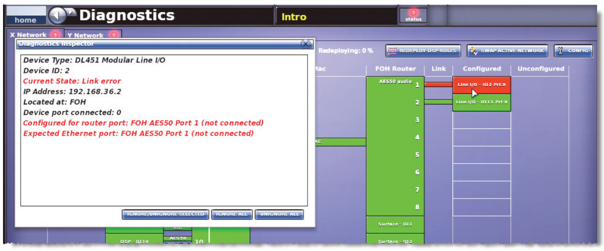
>> To open the Diagnostics screen

At a GUI screen, choose **home** ▸ ***Diagnostics.***

>> To open the X or Y network tab sheets

In the **Diagnostics** screen, click the tab title (**X Network** or **Y Network**) of the network you want.

About the Diagnostics Inspector window


home
Diagnostics
Intro
status
X Network
Y Network
Diagnostics Inspector
Redeploying: 0 %
REDEPLOY DSP ROLES
SWAP ACTIVE NETWORK
CONFIG
Mac
FOH Router
Link
Configured
Unconfigured
AES50 audio
1
2
3
4
5
6
7
8
Line I/O - ID2 Prt:X
Line I/O - ID11 Prt:X
Surface - ID1
Surface - ID2
DSP - ID10
AES50
10
IGNORE/UNIGNORE SELECTED
IGNORE ALL
UNIGNORE ALL

Device Type: DL451 Modular Line I/O
Device ID: 2
Current State: Link error
IP Address: 192.168.36.2
Located at: FOH
Device port connected: 0
Configured for router port: FOH AES50 Port 1 (not connected)
Expected Ethernet port: FOH AES50 Port 1 (not connected)

Clicking an item will open its **Diagnostics Inspector** window (shown right), which provides you with detailed information, particularly if it has an error condition.

The 'ignore' buttons at the bottom of the window let you configure the XL8 to ignore errors on selected/all items. This is an important feature because there may be times when you are quite happy to work with a known error(s), but will want to know when a new error occurs. For example, if you only need 48 channels on an XL8 you will probably only have two mic splitters fitted in the network system, instead of the standard four. The XL8 will detect that there are two missing mic splitters and inform you of this 'error'. By choosing to ignore this, if a new error does occur you will be able to detect it in the usual way.

***Note: Diagnostics Inspector** windows are primarily non-user items for use by Midas service and software engineers. By providing useful information, such as device health and status, they aid fault diagnosis and rectification and may help solve any problems that may arise. Apart from using the 'ignore' buttons, it is unlikely that operators of the XL8 Control Centre will ever need to use this function.*

Thank you for reading through this Quick Reference Guide. We hope you found it useful. Please feel free to send us your comments.

More detailed information on the XL8 can be found in the XL8 Live Performance System Owner's Manual (part number DOC02-XL8). This is available for download from our website.

Our contact details and website address can be found at the front of this document.

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DESIGNED FOR A PURE PERFORMANCE

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